

An In-Depth Examination of the Top Risk Management Strategies for the Industrial Sector

Jayalakshmi M

*Senior Assistant Professor, New Horizon College, Bengaluru
Research Scholar at Mysore University*

Arun Raghu Babu

HOD, Assistant Professor, Department of Management, New Horizon College, Bengaluru

Sindu Akilesh

Associate Professor, Department of Commerce, New Horizon College, Bengaluru

Inchara

Associate Professor, Department of Commerce, New Horizon College, Bengaluru

Veena. R

Associate Professor, Department of Commerce, New Horizon College, Bengaluru

Brindha. N

Associate Professor, Department of Commerce, New Horizon College, Bengaluru

Abstract

The study here deals with evaluation of various kinds of strategies related to risk management affecting the overall development of an industrial sector. Different kinds of problems, which create hurdles in between the success of the industrial operations, have been evaluated in an in-depth manner. The further research aim, objectives, and questions are the ones specifying the various criteria on which the overall findings and discussion take place. Risks are part of any development process which cannot be avoided and therefore carry more importance in the overall success factor of an organization. In the end, the findings with discussion show that there is a direct relationship between the risk management strategies and industrial overall performance.

Keywords: *Risk Management, Industrial performance, Pareto analysis, qualitative analysis, Fluctuations, Demand forecasting, and manufacturing efficiency.*

1. Introduction

1.1 Introduction

The industry sector is one, which faced daily challenges to have proper work completion. Additionally, many risks are adhered to in their daily work, which is required for various strategies implementation. This reason or the

situation of its occurrence can be found in the Background section. The further research aim, objectives, and questions are the ones specifying the various criteria on which the overall findings and discussion take place.

1.2 Background

The industrial sector adheres to many problems which are of two types they are General which is manageable and another is Major which requires definite strategies. The normal growth rate of industries is 4.3% per year and is increasing in an upward direction with the having a growth rate of 7.3% (Country.eiu, 2022).

Figure 1.2: Growth of Industries with various fluctuations



(Source: Country.eiu, 2022)

Industrial growth normally faces fluctuation in it due to the number of risks it and especially the manufacturing sector faces changes. In figure 1.2, the fluctuation is seen in 1-year from Jan 2018 to Jan 2019. The percentage change has been mentioned which has a negative growth between Jan and April and in the month after Jan 2019. Therefore, it can be evaluated that the manufacturing or the overall industrial sector faces problems, which affect its growth rate at regular intervals.

1.3 Research Aim and Objectives

The aim of the study is to determine the role of strategies related to risk management in the operations of the Industrial sector.

Research Objectives

RO1: To determine the industrial growth relation with the risk management strategies

RO2: To evaluate the various types of risks in the overall industrial development

RO3: To investigate the challenges creating hurdles in the Industrial operations

RO4: To analyze the mitigating strategies related to risk management in overall problems of Industries

1.4 Research Questions

RQ1: What is the way in which the industrial growth relation with the risk management strategies is determined?

RQ2: In what manner the evaluation of the various risks that helps in the overall industrial development can be done?

RQ3: What are the challenges creating hurdles in Industrial operations?

RQ4: What are the mitigating strategies related to risk management in overall problems of Industries?

1.5 Problem Statement

Various problems are occurred while carrying out the research in a definite manner, which has been described in this problem statement. The major challenges faced by this industrial sector are Demand Forecasting, Efficiency issues in plants of manufacturing, managing SQLs, Inventory control & management, and ROI enhancement (Duong et al. 2019). The problems of the industries create hurdles, which are to determine, or solved with the help of Strategies related to Risk management.

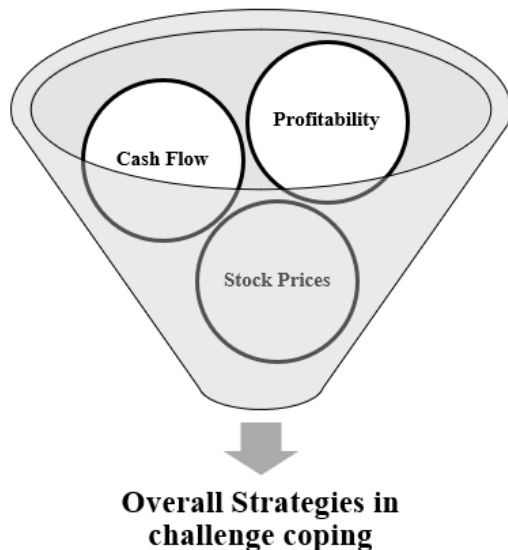
2. Literature Review

2.1 Interrelation between Different Major risks and overall Growth of an industry

Risks are part of any development process which cannot be avoided and therefore carry more importance in the overall success factor of an organization. As stated by Can Saglam et al. (2021), the Industry being the operating section has to deal with various types of risks and difficulties in the operation. However, Baryannis et al. (2019) specify that a case not

recognised properly can create an operational negative growth rate. Risks of different types make industrial growth reduce productivity by 50%.

Figure 2.1: Risks impacting different sectors' growth in an industry



(Source: Influenced by Saeid et al. 2019)

Risks in cases not recognised can hamper different areas of growth, which is directly related to different sections of the operations. It can create a hurdle in Profitability, Cash flow, Stock prices, sales, and overall strategies (Saeid et al. 2019). Figure 2.1 shows different types of areas getting impacted due to various risks.

2.2 Challenges of creating a hurdle in completing daily manufacturing activities efficiently

Manufacturing industries have many operational-related activities, which tend to evolve risk due to many reasons and pre-planning in this department is needed. As critically evaluated by Willumsen et al. (2019), Different types of risks emanating from the environment of Volatile macroeconomics, competitive threats, technological shifts, and induced tariffs by political interference. On the other hand, McMaster et al. (2020) describe

that Growth industries have different approaches to having or maintaining operations and implementing strategies.

Figure 2.2: Different strategies impacting the overall challenges faced



(Source: Influenced by Benami et al. 2021)

Some of the approaches which make the challenges to get faced more appropriation and create more scope for evaluating the challenges. Different types of approaches shown in figure 2.2 are Market penetration, product development, diversification, and market development (Benami et al. 2021).

2.3 Risk Management Strategies' role in the overall development of the Industries

Strategies related to risk management help in determining the actions, which can be implemented to face the challenges and cope with them. As per the discussion made by Pournader, Kach, & Talluri (2020), there are factors, which support industrialization and have a direct connection with risk management. They are Immigration, Attitude Laissez fair, Horizontal with Vertical integration, and High tariffs. Contradictory, Leo, Sharma, & Maddulety (2019) assumes that risky decisions normally develop the attitude of gaining

valuable lessons and success or failure depends on it.

Figure 2.3: Steps in the process of Risk management



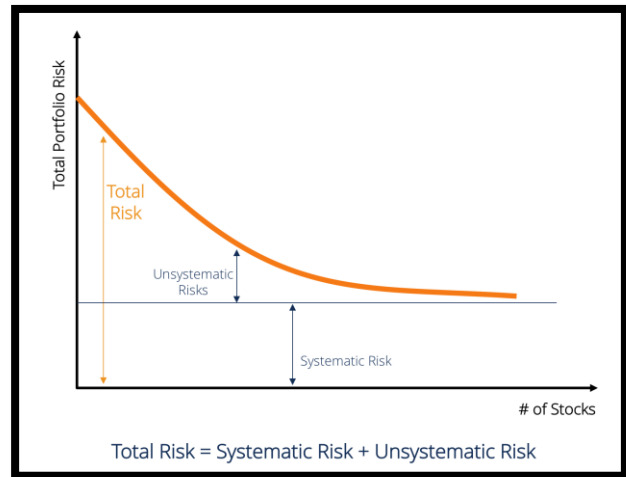
(Source: Influenced by Leo, Sharma, & Maddulety, 2019)

Risk identification is an important process to evaluate the overall success of an industry and requires major steps of involvement in it. Risk examination and treating risk with a Laissez fair attitude help to create more scope of operational success.

2.4 Theory of Risk

This risks theory is determined the expected cost sum, which includes experimentation cost and expected loss, which is due to inappropriate wrong decisions. As commented by Shayan, Pyung Kim, & Tam (2022), the five measures of principal risks are Beta, Alpha, R-Squared, Sharpe Ratio, and Standard deviation. These measures are used to determine the risks in the operational sector of the industries, which largely depends on this type of risk measures.

Figure 2.4: Risks measurement by evaluating its factors



(Source: Corporatefinanceinstitute 2022)

The risks are measured by taking two kinds of risks as shown in figure 2.4, which are systematic and unsystematic. The total risk is the measurement with the evaluation of two factors, which are Stocks on the X-axis and total production on the Y-axis.

2.5 Literature Gap

The study here deals with the importance of risk management and its role in the overall development of industries. Different challenges and mitigating strategies have been taken into consideration. The Risk theory determines the types of risks, which are used to determine the measuring concept of the operations (Le, Chong, & Kashiwagi, 2020). However, the other factors such as Human resource management and their role in making productivity development have been not analysed in a proper manner (Hai, Toan, & Van Tam, 2022). This section avoidance creates a gap in the literature review making future scope to have an evaluation in it.

3. Methodology

The methodology section helps to evaluate the topic in an in-depth manner as it helps to maintain its efficiency level (Nunes, & Abreu,

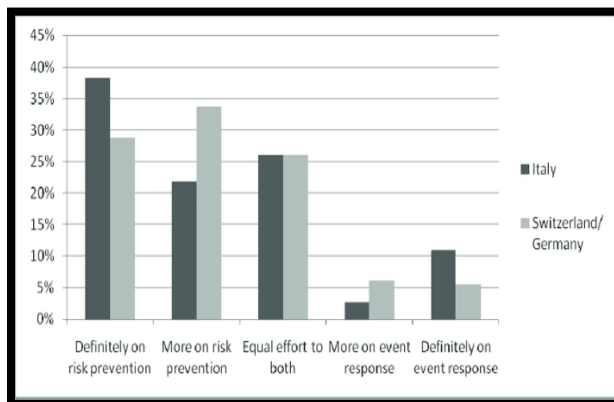
2020). This section of the study has been evaluated by using the Secondary qualitative method. In this method of the secondary method, thematic analysis has been done by taking an overview aspect. The themes are the portion, which is explained by taking the overview of the objectives and their overall impact on the topic. The results defined the topic by taking different analyses of the companies or the industries with the process of development under consideration (Shayan, Pyung Kim, & Tam, 2021). This methodology part provides sound and scientific evaluation as it is one by taking the legitimacy of the information collected.

4. Findings

4.1 Industrial growth is directly related to risk management strategies

Risk consideration is the most important term, which helps to cope with the difficulties of operations or overall development. There are various types of strategies, which are used to cope with the situation of the manufacturing industries (Researchgate.net, 2022).

Figure 4.1: Risk management and its expenses impacting the overall development



(Source: Researchgate.net 2022)

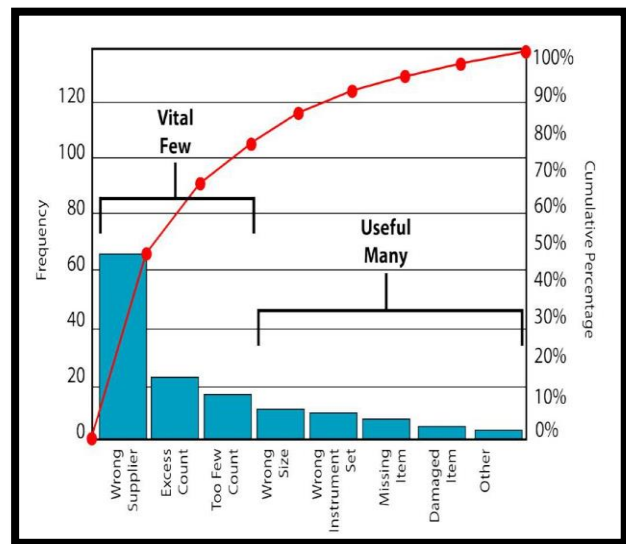
Risk management can be evaluated to have more impact on the development process. Figure 4.1 shows the sending trend of the industries in the country Italy and Switzerland.

The percentage of spending is done on X-axis and the types of management steps related to the risk process are on the Y-axis. It can be seen that Italy has spent more on definitely risk prevention process and Switzerland can be seen to have more spending on more on risk prevention. This states that Italy has definite spending on the risk management sector.

4.2 Evaluation of different types of risks and their impact on industrial development

There are various kinds of risks in the development of the industry, which need to be specified by taking the risk management process systematically. Risks are the one, which put a severe impact on the development and relates to many years of examination done in the related process (Intechopen, 2022).

Figure 4.2: Different challenges impacting the industrial growth



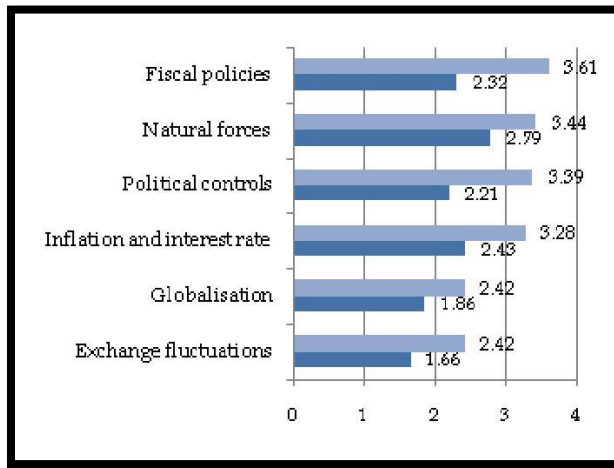
(Source: Intechopen, 2022)

Figure 4.1 describes different levels of risks for the years 2020 and 2021, which are connected by risk management and their effective actions on it. It shows that in every type of risk, there is an increment, which helps to evaluate that the risks are unavoidable and need proper management.

4.3 Challenges obstructing the operations in daily industrial process

Challenges in any industry make its operation more complicated to process and therefore different types of sources or strategies are required. Some of the challenges, which create a risk of haphazard, are wrong supplier, wrong size, damaged item, demand fall, inflation, policies interference, and missing item (Investopedia, 2022).

Figure 4.3: Different risks adhered with various departments



(Source: Investopedia, 2022)

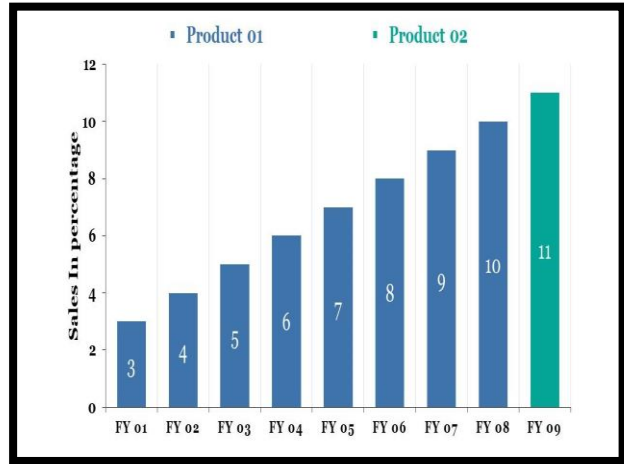
Risk management with different strategic involvement makes the process of operation have more smooth projection. Pareto analysis is one of the risk assessment tools, which is used to evaluate the data in figure 4.3. The data in figure 4.3 shows that the line is going in an increasing trend means that there is a direct relation between the risk analysis method and the challenges to be overcome.

4.4 Risk Management is one of the mitigating strategies to cope the industrial problems

Risk mitigating measures are the ones, which help to find or measure the risk and the extent of the impact on the overall performance of an industry. The four factors of this method are Avoidance, Transference, Acceptance, and

Reduction, which are used to determine the risks by considering different department perspectives (Investopedia, 2022).

Figure 4.4: Risk management by comparing it with sales outcome



(Source: Investopedia, 2022)

Sales forecasting is done by taking different problems and risks into consideration and accordingly the plan is implemented. Figure 4.4 shows that sales are being evaluated and the application of risk management on them is being examined. The data in the figure shows that there is an increasing trend in the production process every financial year.

5. Discussion

The findings in the above sections describe various graphs evaluation, which show that there is a direct relationship between risk management and the overall improvement of the industry (Wuni, Shen, & Osei-Kyei, 2022). Figure 4.1 shows that the two developed countries are utilising risk management strategies to develop their overall performance. Moreover, it can be seen that fiscal policies are the one, which has a major impact on performance. The use of Pareto analysis has helped to identify the problem with more focus on the root of the issue rather than just finding the solutions (Benami et al. 2021). Product 1 and Product 2 in figure 4.4 describes that both

have seen enhanced growth, which is due to the application of risk-mitigating strategies.

6. Conclusion

Thus, it can be concluded that the use of different risk management strategies has a major impact on the overall operations fluctuation in an industry. The use of different concepts and the risk theory evaluation makes the concept clear with the in-depth analysis of the important term. The use of the secondary qualitative method helps to create more scope for getting information from peer-reviewed sources. The findings are based on different statistics, which are collected from various peer-reviewed sources, which have specified a positive link between overall industrial performance growth and risk management.

References

- Baryannis, G., Validi, S., Dani, S., & Antoniou, G. (2019). Supply chain risk management and artificial intelligence: state of the art and future research directions. *International Journal of Production Research*, 57(7), 2179-2202. Retrieved from <https://www.tandfonline.com/doi/abs/10.1080/00207543.2018.1530476> Retrieved on 14th February 2023
- Benami, E., Jin, Z., Carter, M. R., Ghosh, A., Hijmans, R. J., Hobbs, A., ... & Lobell, D. B. (2021). Uniting remote sensing, crop modelling and economics for agricultural risk management. *Nature Reviews Earth & Environment*, 2(2), 140-159. Retrieved from <https://www.nature.com/articles/s43017-020-00122-y> Retrieved on 14th February 2023
- Can Saglam, Y., Yildiz Çankaya, S., & Sezen, B. (2021). Proactive risk mitigation strategies and supply chain risk management performance: an empirical analysis for manufacturing firms in Turkey. *Journal of Manufacturing Technology Management*, 32(6), 1224-1244. Retrieved from <https://www.emerald.com/insight/content/doi/10.1108/JMTM-08-2019-0299/full/html> Retrieved on 14th February 2023
- Corporatefinanceinstitute 2022, Risk caused by factors beyond the control of a company or individual Available at <https://corporatefinanceinstitute.com/resources/risk-management/systematic-risk/> [Accessed on 14th February 2023]
- Country.eiu 2022, Available at <https://country.eiu.com/article.aspx?articleid=717900655&Country=India&topic=Economy&subtopic=Forecast&subsubtopic=Economic+growth> [Accessed on 14th February 2023]
- Duong, T. T., Brewer, T., Luck, J., & Zander, K. (2019). A global review of farmers' perceptions of agricultural risks and risk management strategies. *Agriculture*, 9(1), 10. Retrieved from <https://www.mdpi.com/389918> Retrieved on 14th February 2023
- Hai, D. T., Toan, N. Q., & Van Tam, N. (2022). Critical success factors for implementing PPP infrastructure projects in developing countries: the case of Vietnam. *Innovative Infrastructure Solutions*, 7, 1-13. Retrieved from <https://link.springer.com/article/10.1007/s41062-021-00688-6> Retrieved on 14th February 2023
- Intechopen 2022, Risk Management in Construction Projects Available at <https://www.intechopen.com/chapters/38973> [Accessed on 14th February 2023]
- Investopedia 2022, Pareto analysis is a

- technique used for business decision-making Available at <https://www.investopedia.com/terms/p/pa-reto-analysis.asp> [Accessed on 14th February 2023]
- Le, N., Chong, O., & Kashiwagi, D. (2020). Success factors for project risk management in construction projects: A Vietnam case study. *Journal for the Advancement of Performance Information and Value*, 12(2), 63. Retrieved from <https://pdfs.semanticscholar.org/f811/0d191da3247db1365a3dc5f1554af89bcd20.pdf> Retrieved on 14th February 2023
- Leo, M., Sharma, S., & Maddulety, K. (2019). Machine learning in banking risk management: A literature review. *Risks*, 7(1), 29. Retrieved from <https://www.mdpi.com/422530> Retrieved on 14th February 2023
- McMaster, M., Nettleton, C., Tom, C., Xu, B., Cao, C., & Qiao, P. (2020). Risk management: Rethinking fashion supply chain management for multinational corporations in light of the COVID-19 outbreak. *Journal of Risk and Financial Management*, 13(8), 173. Retrieved from <https://www.mdpi.com/788782> Retrieved on 14th February 2023
- Nunes, M., & Abreu, A. (2020). Applying social network analysis to identify project critical success factors. *Sustainability*, 12(4), 1503. Retrieved from <https://www.mdpi.com/643760> Retrieved on 14th February 2023
- Pournader, M., Kach, A., & Talluri, S. (2020). A review of the existing and emerging topics in the supply chain risk management literature. *Decision Sciences*, 51(4), 867-919. Retrieved from <https://onlinelibrary.wiley.com/doi/abs/10.1111/deci.12470> Retrieved on 14th February 2023
- Researchgate.net 2022, How companies spend their efforts in managing risks Available at https://www.researchgate.net/figure/How-companies-spend-their-efforts-in-managing-risks-The-following-graph-depicts-results_fig7_262346387 [Accessed on 14th February 2023]
- Saeidi, P., Saeidi, S. P., Sofian, S., Saeidi, S. P., Nilashi, M., & Mardani, A. (2019). The impact of enterprise risk management on competitive advantage by moderating role of information technology. *Computer standards & interfaces*, 63, 67-82. Retrieved from <https://www.sciencedirect.com/science/article/pii/S0920548918301454> Retrieved on 14th February 2023
- Shayan, S., Pyung Kim, K., & Tam, V. W. (2022). Critical success factor analysis for effective risk management at the execution stage of a construction project. *International Journal of Construction Management*, 22(3), 379-386. Retrieved from <https://www.tandfonline.com/doi/abs/10.1080/15623599.2019.1624678> Retrieved on 14th February 2023
- Shayan, S., Pyung Kim, K., & Tam, V. W. (2022). Critical success factor analysis for effective risk management at the execution stage of a construction project. *International Journal of Construction Management*, 22(3), 379-386. Retrieved from <https://www.tandfonline.com/doi/abs/10.1080/15623599.2019.1624678> Retrieved on 14th February 2023
- Statista, 2023, Empowering people with data, 2023 Retrieved from: <https://www.statista.com/> retrieved on: 14th February 2023

Willumsen, P., Oehmen, J., Stingl, V., & Geraldi, J. (2019). Value creation through project risk management. *International Journal of Project Management*, 37(5), 731-749. Retrieved from <https://www.mdpi.com/389918> Retrieved on 14th February 2023

Wuni, I. Y., Shen, G. Q., & Osei-Kyei, R. (2022). Quantitative evaluation and ranking of the critical success factors for modular integrated construction projects. *International Journal of Construction Management*, 22(11), 2108-2120. Retrieved from <https://www.tandfonline.com/doi/abs/10.1080/15623599.2020.1766190> Retrieved on 14th February 2023