DETERMINATION OF THE MAIN RISK FACTORS INFLUENCING THE PROJECT SUCCESS: A SYSTEMATIC LITERATURE REVIEW

Nina Banduka[1], Uglješa Marjanović[2] [0000-0002-8389-6927]

Abstract

A substantial body of literature emphasizes the importance of understanding the risks associated with projects. These risks, inherent in every endeavor, can significantly impact project success.

Therefore, this paper aims to determine which factors play the biggest role in finishing the projects successfully and without delay. We used a systematic literature review method PRISMA to identify more than 90 articles. Considering the continuous and fast-paced changes in the industry, only the latest state-of-the-art articles, published in the last three years, have been taken into consideration, to provide a novel insight into noteworthy elements determining projects' success in the recent period. Multiple factors, such as the type of industry and research methodology were taken into consideration. The research has shown that the construction industry has the lead in researching risk factors influencing project success. Two major topics were identified as most studied in determining the risk associated with project success – determining the relationship between multiple factors during the project delivery and modeling systems to determine potential risks. The results given in this review paper can help future project managers consider some additional factors when making decisions and setting deadlines. Additionally, more research should be done to determine the potential factors that can increase the chances of project success in the future.

Keywords: risk factors, project success, project management, management strategies.

1. Introduction

Understanding the risks associated with projects is crucial for ensuring their success, as these risks can significantly affect outcomes. The efficient and timely project delivery is one of the main requirements for project leaders and managers.

---

[1] University of Novi Sad, Faculty of Technical Sciences, Serbia, ninabanduka@gmail.com
[2] University of Novi Sad, Faculty of Technical Sciences, Serbia, umarjano@uns.ac.rs

In order to achieve this, it is necessary to determine key risk factors and to utilize this knowledge to prevent delays.

The need for constant improvement in project management processes requires constant research and developing new strategies, given the fact that different industries or project types require different management paths.

The question is, what are the main strategies when determining potential risks while planning projects, and how are these risks identified and quantified.

Based on this, we identified strategies for project management (PM) risk assessment and listed potential methodologies for improving the project success.

1.1 Methods

Using the PRISMA systematic literature review method, we analysed over 60 articles published in the past three years to ensure a focus on the latest research (see PRISMA Checklist in Figure 1).
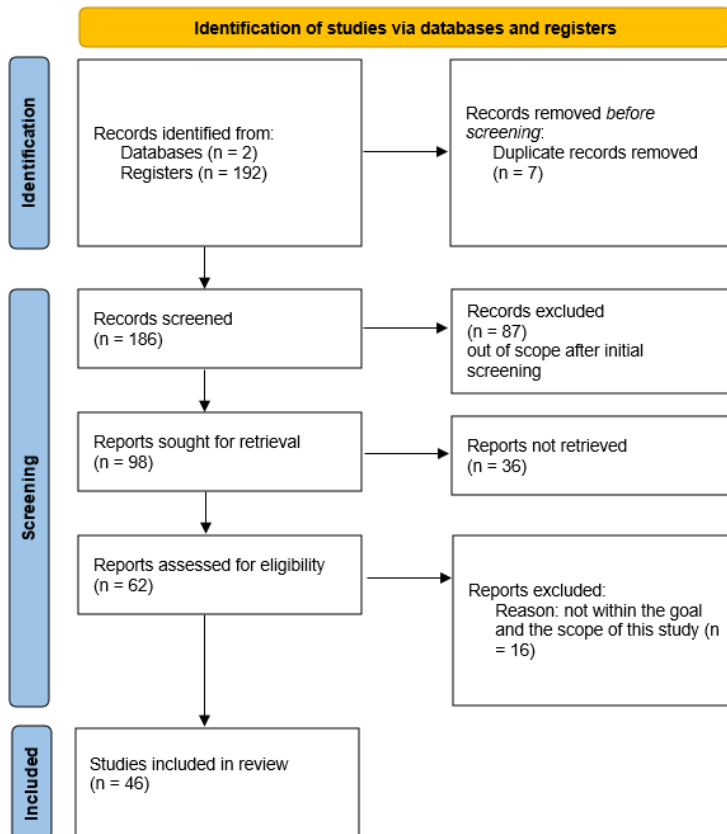

Figure 1: PRISMA flowchart

After determining the PRISMA methodology to be the one to go for this research, we have conducted the following steps:

Step 1. Identifying and defining research goals:

Our goal is to determine main risk factors in project management and proposed strategies for their discovery, and well as the proposed methodologies to alleviate the impact of these factors on project success.

Step 2. Literature search:

In this step, we initiated a rigorous search of the literature. To find relevant published articles we used keywords "project management" AND "risk management" AND "resilience". Two major databases were searched, Scopus and Web of Science (WOS). We limited the search to "Articles" and" English only"; Additionally, time frame was set to last 3 years (2022-2024). The research was condusted in May 2024, so it only includes articles up to this date. The search yielded 192 articles related to our research topic – 182 from Scopus and 10 from WOS (see details in Figure 1).

Step 3. Inclusion and exclusion criteria:

Initially, we checked the data for duplicates, thus discarding seven articles. Later, we screened each (of the remaining 185 articles) article's title and abstract to check its relevance according to our inclusion/exclusion criteria (i.e., related to the study's objectives, publication year between 2022-2024, and academic articles written in the English language). This process resulted in the identification of 98 relevant articles, as 87 articles were found irrelevant as they did not meet study objectives. After discarding these articles, we sought for retrieval of 98 articles, of which we were able to fully retrieve 62 (36 were not retrieved in full version).

We further assessed the quality of the remaining 62 relevant articles and also conducted further checks to determine if the core findings fall within our agenda. After detailed evaluation, an additional 16 articles were excluded, and 46 remained for final analysis.

Step 4. Extraction of data and analysis:

Lastly, we thoroughly studied these 46 articles to identify the risks and strategies to alleviate it that have been discussed in the literature. A detailed discussion of this analysis is given in the discussion section.

2. Discussion

Out of the 46, 42 (91%) were research articles, and 4 were a systematic literature review (9%).

We find that 39% (18) of articles were published in the year 2022, 41% (19) in 2023, and 20% (9) in 2024. Articles were very diverse when it comes to the country of origin (note that, for the articles with affiliations from multiple countries, only the first authors' country was taken into consideration), and there were 8 articles from China (17%), 6 (13%) from Australia, 4 (9%) from each - USA, Iran and

Forging the Future: Pioneering Approaches in Business,
Management and Economics Engineering to Overcome
Emerging Global Challenges - 2024

Turkey, 3 (6%) from France, 2 (4%) From UK, and 1 form each - Brazil, Cyprus, Czech Republic, Denmark, India, Indonesia, Malaysia, Pakistan, Portugal, Romania, Saudi Arabia, Serbia, Sweden, Switzerland and Uganda. In (Table 1) we can clearly see that Australia and China are taking a lead in investigating this topic in recent years.

Table 1: Countries that studied risk factors and project improvement within the last 3 years

Number of studies	Countries
5-10	Australia, China
3-5	France, Iran, Turkey, USA
1-2	Brazil, Cyprus, Czech Republic, Denmark, India, Indonesia, Malaysia, Pakistan, Portugal, Romania, Saudi Arabia, Serbia, Swede, Switzerland, Uganda, UK

Furthermore, 18 of these articles were published in 2022 (39%), 19 in 2023 (41%) and 9 in 2024 – 9 (20%). Most of them (7, 15%) were published in the International Journal of Project Management, then 5 (11%) in Sustainability, and the other were published in various other journals. The distribution of articles published in open access journals (24) and traditional ones (22) was very similar, as can be seen in the Figure 2.
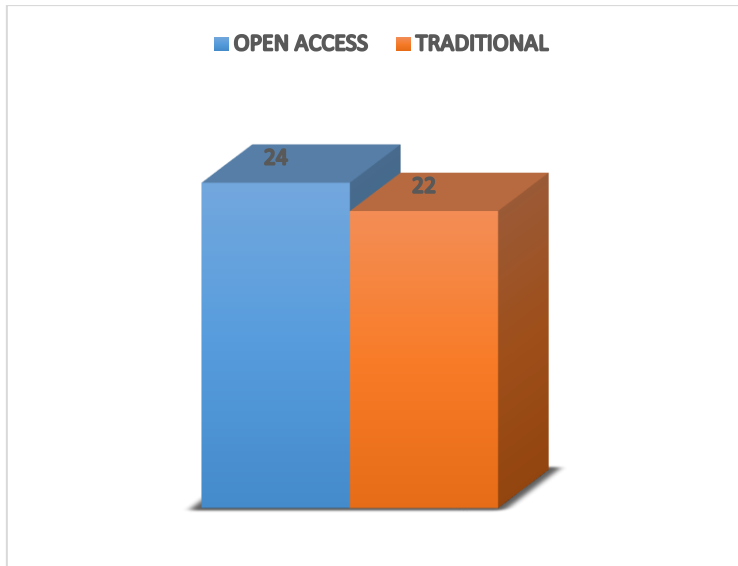

Figure 2. Distribution of open access versus traditional journals

Keyword analysis revealed that most repeated kewords were project; management; resilience; project management and construction. The table 2 summarizes the frequency of the 15 most-used keywords in reviewed articles, and the Figure 3 shows visualization of overall keyword frequency.

Table 2. Most common keywords

Keyword	Number of uses	Keyword	Number of uses
project	43	analysis	7
management	30	complexity	7
resilience	18	theory	6
project management	17	success	6
construction	10	project success	5
performance	10	network	5
projects	9	construction projects	4
risk	9		

Figure 3. Visualised distribution of keywords

After content analysis of the selected articles, it has been concluded that their main research topics could be divided into three groups:

1. Research that proposed models for project risk management or PM efficacy improvement
2. Research on the relationship of factors in project management
3. Research on various other factors

The majority (22/46) of the papers (e.g. Wang et al. (2022), Jiang et al. (2024), Zarghami (2024), Hamdani et al. (2024), Nunes et al. (2022) etc.) deal with proposing different models for increasing project resilience or choose best strategies for project management, using mainly surveys based on questionnaires and interviews, and some of them testing the model in a case study.

Nine out of forty-six studies (such as Safapour et al. (2023), Al-aloosy et al. (2024), Franke et al. (2022) etc.) focused on finding relationships between project factors or participants to the success of the project.

Besides modelling of the processes and determining the corelation between different factors on PM success, additional studies researched topics such as project success decreasing due to the unforeseen events (Mollajan et al., 2023), crisis events like Covid (Omotayo et al., 2024) or external disruptions (Iao-Jörgensen, 2023) etc.

Based on methodology that is used in these research, it is notable that the predominant choice is a survey (a questionnaire and/or interview was conducted in 24/46 studies) or a case study (a method used in 15/46 studies), which is usually used to test the proposed models in research papers.

3. Conclusions

A numerous study that are included in this literature review reveal several key findings on project risk management and factors influencing project success. Multiple studies propose models to enhance project resilience and management effectiveness, utilizing mainly methods like surveys, interviews, and case studies, while others research different influence of external factors to the project success, or merely analyze data to obtain better understanding and knowledge of different strategies or factors. Among the methods used, besides the three mentioned, were, in a lesser occurrence, the methods like data analysis, quantitative analysis and cluster analysis.

The main methods used are shown to be a survey (a questionnaire and/or interview was conducted in 24/46 studies) and models are usually verified by conducting a case study (method used in 15/46 studies).

It should be concluded that many of the studies used specific case studies for their research and that all aspects of project management should be analyzed according to the specific project and apply the appropriate measures accordingly.

The proposed studies can serve as a lead in determining the best strategies when planning projects and determining the best practices. This research gives a theoretical base on the key points to be considered while planning projects and the main methodologies for their determination identified in this study can be used for application in industry/company practices.

Additionally, given that the majority of these studies was conducted in a construction industry, further research should be conducted in other areas in order to compare results and provide insight into effects of different industries to applying same methods and models.

REFERENCES

[1] Al-Aloosy, K. F. Q., Mirvalad, S., & Shabakhty, N. (2024). Evaluating the impact of internet communication quality in human resource management on the

productivity of construction projects. *Heliyon*, *10*(7), e28500. https://doi.org/10.1016/j.heliyon.2024.e28500

[2] Franke, H., Wynstra, F., Nullmeier, F., & Nullmeier, C. (2022). Project managers' reactions to project disruption: sponsor actions versus environmental uncertainty. *International Journal of Operations & Production Management. 42*(13), 335–357. https://doi.org/10.1108/IJOPM-02-2022-0103

[3] Hamdani, F. E., Quintero, I., Enjolras, M., Camargo, M., Monticolo, D., & Lelong, C. (2022). Agile supply chain analytic approach: a case study combining agile and CRISP-DM in an end-to-end supply chain. *Supply Chain Forum: An International Journal*, *25*, 1–15. https://doi.org/10.1080/16258312.2022.2064721

[4] Iao-Jörgensen, J. (2023). Antecedents to bounce forward: A case study tracing the resilience of inter-organisational projects in the face of disruptions, *International Journal of Project Management*, *41*(2). https://doi.org/10.1016/j.ijproman.2023.102440.

[5] Jiang, W., Zhao, X., Cai, C., Chang, K., Liu, K., & Liu, Y. (2024). Study on Resilience Evaluation for Construction Management of Major Railway Projects. *Buildings*, *14*, 732. https://doi.org/10.3390/buildings14030732

[6] Mollajan, A., Iranmanesh, S., & Tavakkoli-Moghaddam, R (2021). A systems approach to improve reliability of a contract by Modularising contract's information flow architecture: a new contribution to risk mitigation in projects management. *Enterprise Information Systems*, *17*(9). 10.1080/17517575.2021.1971773.

[7] Nunes, M., Abreu, A., Bagnjuk, J., Nunes, E., & Saraiva, C. (2022). A Strategic Process to Manage Collaborative Risks in Supply Chain Networks (SCN) to Improve Resilience and Sustainability. *Sustainability*, *14*, 5237. https://doi.org/10.3390/su14095237

[8] Omotayo, T., Brudenell, T., Olanipekun, A., & Egbelakin, T. (2024). Managing construction delivery during the COVID-19 pandemic in the UK construction industry. *International Journal of Business Governance and Ethics*, *18*, 188–214. 10.1504/IJBGE.2024.136988.

[9] Safapour, E., Kermanshachi, S., & Ramaji, I. (2022). Selection of Best Practices that Enhance Phase-Based Cost and Schedule Performances in Complex Construction Projects. *Engineering Management Journal, 35*(1), 84–99. https://doi.org/10.1080/10429247.2022.2036068

[10] Wang, D., Wang, P., & Liu, Y. (2022). The Emergence Process of Construction Project Resilience: A Social Network Analysis Approach. *Buildings*, *12*, 822. https://doi.org/10.3390/buildings12060822

[11] Zarghami, A. (2024). Resilience to Disruptions: A Missing Piece of Contingency Planning in Projects. *International Journal of Production Research*, *62*(17), 6029–6045. https://doi.org/10.1080/00207543.2024.2306474