A comprehensive method for identifying key stakeholders in infrastructure civil projects of the country (Case study: Part B2 of Tehran-North Highway Project, Iran)

H. Toosi[1*], P. Ghashghaei[2]

[1]School of Architecture, Tehran University, Tehran, Iran
[2]Department of Civil Eng, Islamic Azad University of Shiraz, Shiraz, Iran

ABSTRACT: Several methods have been proposed to identify the projects' stakeholders. However, project managers are still confronting severe challenges in selecting an appropriate stakeholders' identification method while meeting their expectations in the project. This research is mainly aimed to present a comprehensive method to identify stakeholders in the infrastructure projects of the country by applying the Meta Synthesis Method in part B2 of the Tehran-North Highway project. In this study, a systematic investigation was initially carried out regarding the management of stakeholders. Then, using the Meta Synthesis Method, all the stakeholder identification models were examined and the important components were extracted. By combining the different extracted components, a comprehensive method was proposed as a thorough and functional strategy for the managers to identify the key stakeholders in the infrastructure projects. This model consists of five main components including the project inputs, environmental factors of the project, projects'contradictions, tools for stakeholders' identification, and tools for stakeholders'classification, which simplify the stakeholders' identification process in projects. Ultimately, to evaluate the presented method, semi-structured interviews were conducted with the senior executive managers of part B2 of the Tehran-North Highway project. The obtained data from interviews were codified by axial coding and the coded data were then analyzed. The results reveal that utilizing the proposed method in the target project of this study leads to the identification of 45 more stakeholders in addition to the 23 stakeholders previously identified based on conventional methods.

1- Introduction

Large construction projects, such as infrastructure works, possess multiple dimensions in terms of their strategic positions and social, organizational, and cultural environments. Hence, the prompt identification of stakeholders and their management in these projects are extensively paramount since they are the main sources of uncertainty in these complex milieus and can influence the project execution and advancement processes in one way or another [1]. In addition to the initial recognition phases, the stakeholder identification process goes on during the project implementation, and a wide spectrum of stakeholders are gradually identified. This process continues throughout the project implementation. It is straightforward to identify some stakeholders, such as customers, suppliers, project teams, and final consumers; however, some others indirectly related to the project are hardly recognized. Significant stakeholders may be identified prior to the project team's formation. Likewise, a project can possess a small group or millions of stakeholders. Defining and sharing a transparent vision of stakeholders at the project onset can build proper and aligning relationships between the project management team and stakeholders during the project implementation. Creating a clear perspective on which key stakeholders compromise necessitates challenging negotiations, especially with stakeholders not advocating the project or its considered results [2]. It is imperative to perceive that not all stakeholders equally influence a project, and they cannot be similarly identified and managed. In recent years, many studies have been published in Iran with respect to the significance of stakeholder management in projects. However, the bulk of the research on this domain has addressed stakeholder management, neglecting the stakeholder identification process. According to studies, to identify stakeholders in construction projects, the management team access numerous tools and methods and randomly employ them or the conventional identification approaches. Hence, designing an efficient approach and an applied tool capable of facilitating the stakeholder identification process for managers and project management teams in infrastructure construction projects will be invaluable. The present research mainly aimed to present a comprehensive stakeholder identification method in infrastructure construction projects

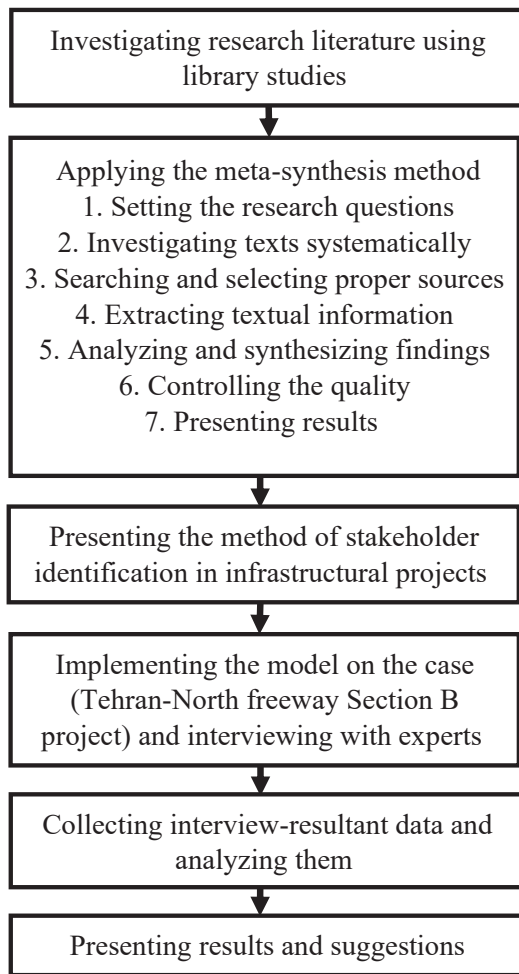*Corresponding author's email: toosi@ut.ac.ir

```
┌─────────────────────────────────────┐
│   Investigating research literature using │
│             library studies          │
└─────────────────────────────────────┘
                   ↓
┌─────────────────────────────────────┐
│   Applying the meta-synthesis method  │
│     1. Setting the research questions  │
│   2. Investigating texts systematically │
│   3. Searching and selecting proper sources │
│      4. Extracting textual information │
│   5. Analyzing and synthesizing findings │
│         6. Controlling the quality     │
│           7. Presenting results        │
└─────────────────────────────────────┘
                   ↓
┌─────────────────────────────────────┐
│   Presenting the method of stakeholder │
│   identification in infrastructural projects │
└─────────────────────────────────────┘
                   ↓
┌─────────────────────────────────────┐
│   Implementing the model on the case   │
│   (Tehran-North freeway Section B      │
│   project) and interviewing with experts │
└─────────────────────────────────────┘
                   ↓
┌─────────────────────────────────────┐
│   Collecting interview-resultant data and │
│             analyzing them            │
└─────────────────────────────────────┘
                   ↓
┌─────────────────────────────────────┐
│   Presenting results and suggestions   │
└─────────────────────────────────────┘
```

Fig. 1. The framework of the research implementation process

in Iran to take steps toward improving the implementation process and reduce project conflicts via prompt recognition and management of stakeholders. Thus, applying the meta-synthesis method, this study embarked on retrieving studies and library sources in valid databases. In this regard, a wide spectrum of the respective valid scientific articles and sources has been explored systematically for the discovery of the common concept of studies. Next, by the categorization of these studies, their extracted findings have been coded according to the meta-synthesis method (categorizing concepts and uncovering their conceptual relationships), and a process model has been introduced by the synthesis of these concepts. The proposed model is capable of identifying a plethora of stakeholders in projects and can provide project managers with an appropriate tool to recognize stakeholders. Concerning the outnumbering challenges and high diversity of its stakeholders, the Tehran-North freeway (Section B) project has been considered as the case study for model validation and implementation.

2- Research process

To achieve a comprehensive model of stakeholder identification in infrastructure projects, the present study has designed a model (figure below) and implemented it through six successive phases. In the following, every one of these phases is investigated, and their results are presented.

3- Discussion

The present study sought to present a comprehensive model for stakeholder identification in infrastructure construction projects. The model was derived from applying the meta-synthesis method in seven phases of setting the research questions, exploring previous studies systematically, searching and selecting proper and valid sources, extracting information, analyzing and synthesizing findings, validating and controlling the quality, and presenting the results. However, the efficacy and comprehensiveness of the stakeholder identification method required validation. Thus, to practically and quickly test the obtained method, this research implemented the model on a large and epochal project of the country as its case study (Tehran-North freeway). In the road construction domain, all individuals familiar with this project confirm that it is one of the most complicated and special projects and is influenced by various technical, economic, environmental, political, legal, and social issues. Therefore, selecting this project as the case for implementing and measuring the reliability of the results of this research provided the research team with a significant challenge, while it could reflect the efficacy of the research findings thoroughly.

Initial investigations revealed that the importance of identifying different stakeholders in the freeway project led to the recognition of 23 stakeholders through semi-structured interviews with the managers and experts of the case. This conventional stakeholder identification method reflects the significance of introducing a comprehensive and reliable method for detecting a wide spectrum of considered stakeholders in infrastructure projects. Through the implementation of the method presented in this research, 45 stakeholders were identified in addition to those detected by the conventional methods in a large infrastructure project of the country. This improvement revealed that the presented model could properly attract the attention of large projects to their diverse and potential surrounding. Evidently, the proper identification of stakeholders will guarantee a more thorough analysis of their expectations and be the key to success in the stakeholder management process.

4- Conclusions

The most crucial findings of this research are described below:

1. The method this article presented based on the meta-synthesis approach is composed of five main components, including the project inputs, environmental factors of the project, project conflicts, stakeholder classification tools, and stakeholder identification tools.

Every mentioned component owns different sub-components for implementing the stakeholder identification process. The managers of large, complex, and infrastructure projects are required to notice this hierarchy as the main factor engendering the requisite inclusiveness and integrity among the previous stakeholder identification tools and methods to investigate the various evidence, documents, and events of projects.

2. The conventional methods of stakeholder identification could identify a limited number of stakeholders. This problem brought about some intricacies, including the genesis of different risks and conflicts, the rise of cost, the lengthening of time, and negligence of the demands of stakeholders not identified in the project's outset. The implementation of the mentioned model enables the identification of a wide spectrum of project stakeholders. This potentiality can withdraw the risk of many subsequent project problems, such as the emergence of new conflicts, and thus the project does not face the cost and time-associated problems due to adding new expectations to the implementation process. For example, 23 stakeholders were identified by the conventional methods in the Tehran-North freeway (Section B2) project. However, this number increased to 45 with the application of the comprehensive method presented in this research.

Promptly identifying the list of new stakeholders in the project is important to the degree that many potentials of optimizing implementation methods, such as constructing new ways of access to the centerline, solving some local conflicts, supplying local materials, shortening time, and decreasing the cost of executive practices, could be pursued and realized from the project start by recognizing the missed stakeholders and negotiating with them.

3. Due to the similarity of the infrastructure construction projects' nature, the recognized stakeholders in every project, e.g., the case of this research, can be employed as the stakeholder databank in other works of the project-centered companies. This databank gradually facilitates and accelerates the process of identifying stakeholders and culturalizes the further and better incorporation of this significant matter in project management.

References

[1] J. SIERING, A. SVENSSON, Managing External Stakeholder Relationships in PPP Projects-A Multidimensional Approach, 2012.

[2] A Guide to the Project Management Body of Knowledge (PMBOK Guide), in, P. M. Institute, 2021.