A Review of Previous Researches' Methods on Stakeholder Management at Construction Projects

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Abstract. The construction project involves many stakeholders from various disciplines and professions. Each person has his own attitude and views on the project's development. Moreover they also have different roles. These different roles can cause conflicts if not managed properly. Under these circumstances, managing stakeholders in a construction project are very important in order to achieve successful project. Recently, research on stakeholder management is developing widely. There are many studies that discuss stakeholder management's research using different methods. It is important to know the appropriate method for research on stakeholder management. This study discusses the method used in the previous researches about stakeholder management through a literature review of 20 papers. The result of this study is the mapping of various research methods that can be used as recommendations for determining research methods in further research in the field of stakeholder management. Furthermore, further research on concept, limitations, and variables's mapping in the field of stakeholder management can be done so that theoretical mapping for stakeholder management is more comprehensive.

1. Introduction

The construction project involves a large number of participants who have various interests [1], [2]. The participants involved in the project have diversity in terms of profession, culture, education, gender, and spatial distance from the project which causes differences in project interests that must be resolved through the delivery of the project [3]. These parties are called stakeholders, namely several groups or individuals who can influence or be affected by the achievement of project objectives. The success of the project is the achievement of project objectives from the point of view of the stakeholders, such as the accuracy of cost, time, and quality in accordance with the agreement with related parties. If the stakeholders are not managing the project properly, it can cause a conflict at project delivery process and will not assist the implementation of development projects [1], [4]. An effective stakeholder management is needed to achieve a successful project. Others conducted researches to find out whether stakeholder management influences trust in the project, show that stakeholder management (SM) influences three types of trust, so it is important that project managers do not fail to consider actions such as communication with empathy at the start of the project [5]. In implementing SM, there are various problems such as meeting the lack of elaborative tools to manage SM performance in construction projects, and conducting research to produce a conceptual model of effective SM performance attributes [3].

Based on this situation, SM at construction project seized a lot of attention of research in the field of project management. In SM research, different methods are used for achieving research's goal. It is

necessary to discuss research methods and to map the methods to obtain which methods are mostly used and should be used on further research in this field. Therefore, the purpose of this study is to review the methods used in previous studies and map these methods. This study uses literature review method by using reputable journals with the topic of SM in construction projects in consideration of their impact positions in the research community in terms of SCImago Journal Rank and H-index. The findings of this study can be used as guidelines of research methodology for future researches.

2. Conceptual Background

The aim of this literature review is to present the main concept from the journals about stakeholders in construction projects and the methods used in the previous researches.

2.1. Stakeholder on Construction Project

Stakeholders are individuals who have personal goals and values. They create organizations that have their own corporate goals. They are also capable of obtaining support from the law for the sake of project development [6]. Stakeholder participation can contribute to balancing the needs and interests of various stakeholders in the decision making process of a property development project [7]. Project development is carried out by several stakeholders involved by adopting one or more roles in the development process [6]. Therefore, there is a need for SM in construction projects. SM is the process by which the project team manages needs, identifies, and gathers expectations, makes agreements with stakeholders, and ensures that the goals are achieved [8].

2.2 Methods of Previous Research

Some research methods that were usually used in previous studies were statistic analysis, interview, literature review, and case study.

2.2.1 Research Philosophy. In general, there are two main paradigms in the research methodology namely the positivist paradigm (quantitative research) and the naturalistic paradigm (qualitative research) [9]. Qualitative research uses data collection and analysis that do not involve numbers and illustrate reality in life according to respondents [9]. While quantitative research is a research that involves numbers, statistical analysis, and has a strict research design standard that was developed before the actual research [9]. In a study the requires data sources that are divided into two types, which are primary and secondary data. Primary data is obtained through informants by researchers conducting surveys [9]. While secondary data is obtained through organizational data archivment or historical data obtained from books, library materials, literature, previous research, and so forth [9].

2.2.2 *Research Technique.* The following are some research techniques used in the previous stakeholder management research on construction:

a. Survey. It is a method used to obtain information from people directly and is most widely used by researchers, this method involves the statement of respondents about the current status of the subjects studied, and can describe a very large population [9]. In conducting surveys, it is important to consider sample selection and administration [9].

b. Interview. This method is characterized by researchers asking respondents a series of open questions or raising topics for discussion. This method allows researchers to get a lot of information with little time and small sample size [9]. There are three types of interviews, namely exploratory interviews, design interviews, and in-depth research interviews. Respondents in the interview must represent the group studied, and must be able to provide the information needed to answer the research question. The interview requires a long time, and a good number of samples in this method are as many as 20 to 30 respondents [9].

c. Literature Review. It is an in-depth and critical study of topics in previous scientific literature, which are included in scientific literature, namely papers from scientific journals, papers from conferences, theses and dissertations, reports, and textbooks [9]. While types of literature reviews are evaluative review, exploratory review, and instrumental review [9].

d. Case Study. This method is used to study certain phenomena in certain events, and has a very narrow scope, which is often used to determine whether certain approaches work in certain circumstances. But this method is very powerful in questioning theories because basically this method is an inductive research method [9].

3 Result and Discussion

3.1 Methodology

The first thing used in this research is to find and choose research that has a topic about SM. Then 20 papers from reputable journals were selected from year of 2009 to 2019 and they were used in the literature review discussing about SM in construction projects. Here is a list of journals that are used along with their rankings based on the SJR. These journals are: International Journal of Project Management (Q1), Journal of Cleaner Production (Q1), Habitat International (Q1), Journal of Management in Engineering (Q1), Journal of Construction, Engineering, and Management (Q1), Construction Management and Economics (Q1), Journal of Building Engineering (Q1), Journal of Civil Engineering and Management (Q1), Engineering, Construction and Architectural Management (Q1), Built Environment Project and Asset Management Journal (Q2), and International Journal of Building Pathology and Adaptation (Q2).

Table 1. Distribution of selected journals and number of papers.

No.	SJR	Name of Journal	Number of Paper
1	2,20	International Journal of Project Management	5
2	1,62	Journal of Cleaner Production	1
3	1,52	Habitat International	1
4	1,04	Journal of Management in Engineering	2
5	1,04	Journal of Construction, Engineering, and Management	1
6	0,78	Construction Management and Economics	3
7	0,68	Journal of Building Engineering	1
8	0,59	Journal of Civil Engineering and Management	1
9	0,58	Engineering, Construction and Architectural Management Journal	3
10	0,52	Built Environment Project and Asset Management	1
11	0,45	International Journal of Building Pathology and Adaptation	1

3.2 Result

Currently, there is a lot of research about SM on projects related to the importance of SM in project success. Similar to a research related to stakeholder perspectives regarding SM in public-private partnership (PPP) projects in developing countries [10], this study aimed at PPP research from the perspective of external stakeholders using a qualitative method with interviews of 14 external stakeholders and a case study. In addition other research aimed at linking stakeholder groups, who wanted to increase their significant interests, by using social network analysis [11], some used literature review methods ([1] and [3]) to explore dimensions of traditional authority that influence management of interests in pre-construction development in Ghana [12], and some researchers used a qualitative method with stakeholder research for SM [13].

Other studies discuss the interrelationships between factors that support criticism (CSF) for SM and success. It based on a questionnaire survey conducted on the construction industry. The latent variables are: stakeholder characteristics and project characteristics (SCPC); stakeholder analysis (SA); dynamics stakeholder (SD); and stakeholder involvement / empowerment (SE) [4]. In addition, the results of research by [14] show that most CSFs are considered truly important and vital for the successful management of interests by conducting surveys with structured questionnaires. Similar results were shown by other studies, CSF was considered important in assisting SM on development projects based on respondents' perceptions in the questionnaire survey [15].

Nevertheless, some researches highlight stakeholder participation in construction projects. There is a research using case studies and interviews to investigate how stakeholders could participate in the initial phases of the construction project and how relevant insights could be gathered from stakeholders

with very different backgrounds and interests [16]. Through research by conducting semi-structured interviews, surveys, and case studies results are gathered which state that collaborative SM positively influence cost performance, and cost performance is the most important driver for collaborative stakeholders management [17]. Different from the previous one, there is a study using case studies for investigated stakeholder involvement in mega construction projects (MCP) in Australia and explored the evolution of stakeholder analysis. The results showed that the project team had identified the importance of sustainability to manage stakeholders in a large project [13]. Through the literature review, it was found that traditional stakeholder analysis techniques were widely adopted in MCP. Regardless of their weaknesses, a social networking approach was needed to manage stakeholder relationships in these projects [1].

Some researches in the field of SM have the aim of making a SM framework [18], [19], [20]. The research produced a framework for effective SM practices so that it can be used as a reference for the project management team to manage stakeholders effectively and systematically on construction projects. From the explanation above, it was found that many methods were used in research on SM in construction projects. The methods used in some previous researches are different because it is adapted to the research objectives.

3.3 Discussion

Based on the literature review conducted then a mapping research's techniques from previous research on stakeholder management can be made which can be seen in Table 2.

Table 2. An overview of previous researches technique

No.	Techniques	Previous Studies
1	Literature review, interview, survey	[21]
2	Survey	[4]; [5]; [15]
3	Literature review	[1]; [3]; [22]; [23]
4	Interview, Literature Review	[20]
5	Literature review, Focus Group Discussion	[12]
6	Case study, interview	[10]; [16]; [18]
7	IT model	[11]
8	Case study	[13]; [24]
9	Literature review, survey, case study	[25]
10	Literature review, survey	[14]
11	Survey, interview	[18]; [19]
12	Interview, survey, case study	[17]

From Table 2, we can see various research techniques used in previous studies. There are 12 techniques from 20 literatures. After knowing the various research techniques, they are grouped based on qualitative and quantitative methods and their data sources, primary and secondary, which can be seen in Table 3.

Tabel 3. Researches' classification based on their methods and data sources

No.	Research Method		Source of Data		Paper
	Qualitative	Quantitative	Primary	Secondary	
1	Y	N	Y	N	[10]; [11]; [12]; [16]; [19]; [21]; [25]
2	N	Y	Y	N	[4]; [5]; [14]; [15]
3	Y	N	N	Y	[3]; [14]; [22]; [23]; [24]
4	N	Y	N	Y	[1]
5	N	Y	Y	Y	[2]
6	Y	N	Y	Y	[13]; [21]
7	Y	Y	Y	N	[17]; [18]; [23]

In Table 3, the letter Y indicates the method and source of data used in the paper, while N indicates the methods and sources of data that were not used in the paper.

From Table 3, a mapping of research methods and data sources is made, which consists of horizontal lines showing research methods that are qualitative and quantitative, while vertical lines show the sources of data used in research namely primary and secondary. From this mapping it can be seen which methods and data sources are most widely used in previous research on SM which can be seen in Figure 1. Based on the figure, the most widely used method in research on SM is qualitative methods with primary data.

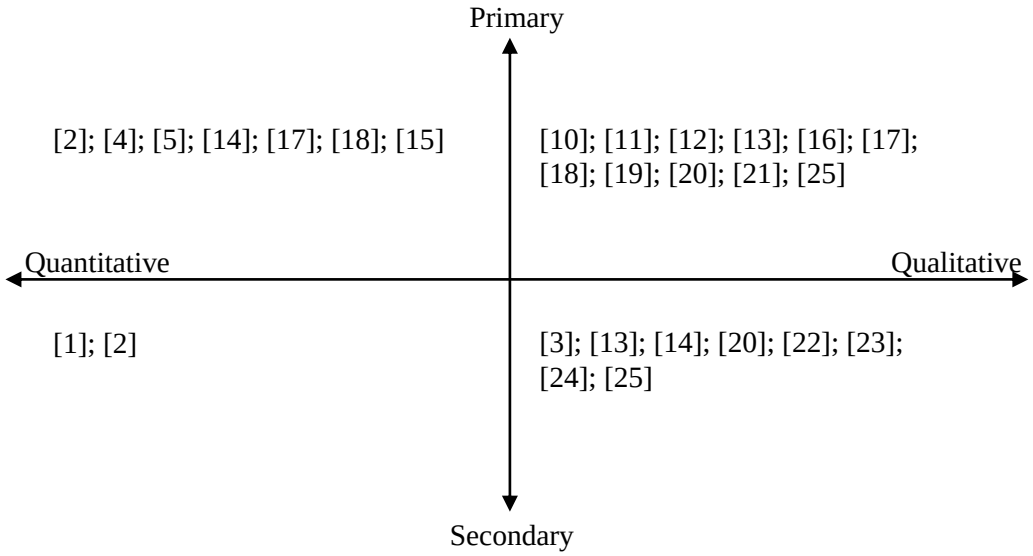

Figure 1. Mapping of methods used in the previous researches

4 Conclusion

Various research methods used in the previous research on SM have been identified. Researches from year of 2009 to 2014, which were reviewed in this study, mostly uses qualitative methods with primary data, while in the researches from year of 2015 to 2019. Based on the discussion, the most widely used method is a qualitative method using primary data. So, it can be concluded that further research should be suggested using qualitative research methods with primary data derived from surveys and interviews. The results of this study are expected to be useful in further research in this field, especially in determining research methods and data used in research. In addition, Future studies can also use the approach produced in this paper in terms of the number of papers and the time span to get a better understanding of future research methods in the field of SM.

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