

HOW TO EMBRACE THE STAKEHOLDER IN PUBLIC PRIVATE PARTNERSHIP DECISION-MAKING? A THEORETICAL DISCOURSE

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Stakeholder is the seed of unpredictability and subjectivity in decision-making over the long-lasting, relationship driven, life cycle of PPP projects. However, their conflicting interests, roles and responsibilities alter their level of involvement and importance leading to conflicts which may escalate into litigation, renegotiation or, even worse, project failure. This makes the PPP decision-making highly fragmented, contextual and dynamic. Motivated by a limited relevant research, the current study focuses on integrating the stakeholder into PPP decision-making. For this purpose, PPP specific stakeholders are identified through a content analysis. Further, a conceptual framework for stakeholder integration is devised based on the identified research concentrations obtained through a thematic analysis. The framework consists of three interacting components; issues, process and solutions supported by important considerations identified through an extensive literature review. Additionally, a conceptual mechanism providing rationalization for conflict emergence has been presented, formalising the types of conflict based on the stakeholder relation, and their interaction with the project. The study provides a foundation for proactive conflict and relationship management by treating PPP as a complex arena with multiple stakeholders, drawing upon their theoretical knowledge base.

Keywords: conflict emergence, PPP, stakeholder identification, complex systems

INTRODUCTION

The situation for stakeholders in public-private partnership (PPP) structuring for large infrastructure projects is more sensitive and complex than in a typical construction project (Jayasuriya *et al.*, 2016). It requires proactive efforts in stakeholder identification and categorization to effectively figure out their roles and responsibilities in the project (El-Gohary 2006). This is not only important for addressing the ineffective risk allocation issue in PPP contracts but is also desirable for prevention of opposition and conflict (Burke and Demirag 2017). Different

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pressure groups in the external boundary of the project need to be considered in the decision-making process for greater public acceptance (Badasyan and Alfen 2017).

These issues raise serious concerns for the policy and decision makers, demanding greater flexibility in contracts for social inclusion and innovation. To manage the numericity of stakeholders over the project life span and achieve total project success (Aladpoosh *et al.*, 2012), integration of stakeholder management concepts in PPP scholarship appears to be a logical first step which has not been addressed substantially till now in the relevant research domain with limited crossover studies of the two areas available in this context (De Schepper *et al.*, 2014).

It demands a philosophical and epistemologically pluralistic rationalization for effective decision-making. This can be done by expanding the linear and inflexible contractual decision-making framework of PPP (Demirel 2017) with information sharing between two main liable parties into a multi-actor decision space allowing for exploring the entire environment for developing real term partnerships based on trust (Domingues and Zlatkovic 2015). To map and formalize this decision space, the current study has chosen to interpret the PPP contract as a complex system using concepts highlighted in complexity theory (Anderson 1999) and analyse the stakeholder management issues in the PPP system using stakeholder theory (Freeman and Reed 1983; Parmar *et al.*, 2010). The advantage that the stakeholder theory offers to decision makers is its normative approach towards stakeholder inclusion focusing on their behavioural patterns and relationship management for value creation (Aladpoosh *et al.*, 2012).

Many authors have acknowledged PPP as a complex system in general but little effort has been put to seek the implications of complexity theory in interpreting this relationship. The underlying basics of complexity theory (Anderson 1999) and its various concepts relevant to management (Cicmil *et al.*, 2009) have been applied in this study to provide basis for integrating knowledge of stakeholder management in PPP decision-making. Considering complexity theory, PPP can be viewed as an open system, with interacting components exchanging feedback with its external environment. This implies that both the internal and external stakeholders should be considered during the decision-making processes.

On the other hand, the knowledge base of stakeholder theory (Parmar *et al.*, 2010; Freeman and Reed 1983) has been briefly analysed to provide inspiration in rationalization of stakeholder related-issues in PPP projects. Whether or not someone is a stakeholder in the project, can be decided on the basis of drawing on normative considerations of stakeholder theory. In the multi-actor system of PPP, stakeholder behaviour can be considered dynamic due to their varying power and interest across the life cycle phases. Because of this, their attitude towards any decision will also shift on basis of time and changes in the surrounding environment of their interaction with other stakeholders and the processes. This makes the stakeholder behaviour contextual. Considering stakeholder behaviour dynamics, a power balance needs to be sought in their conflicting interests to achieve value creation and social equity for legitimate stakeholders in any decision scenario.

Considering the above arguments and propositions, exploratory questions are raised as follows:

Over the last eighteen years, how much traction has this topic generated among researchers in the construction engineering and management (CEM) discipline?

What are the key issues and decision-making aspects explored in the relevant literature and how can the current research contribution be better rationalized for stakeholder inclusion in PPP decision-making?

How can the dynamic nature of stakeholder relationships be rationalized for deepening the underlying stakeholder-induced dynamism in a PPP decision-making system?

These questions have guided the development of methodology of this study which also highlights the different meta-analysis conducted in the research to seek substantial answers.

RESEARCH METHODOLOGY

Formation of Dataset

The primary method employed in this research is content analysis of published studies. PPP literature published during 2000-2018 was extracted via different databases, Web of Science, Scopus, Taylor and Francis, ASCE, Elsevier and Google Scholar, using keywords ‘public private partnerships’, ‘P3’, ‘BOT’, ‘DBFM’, ‘TOT’, ‘BOO’ and ‘PPP’. The flow diagram showing the detailed method employed for reaching the dataset used for the in-depth content analysis is shown in Figure 1.

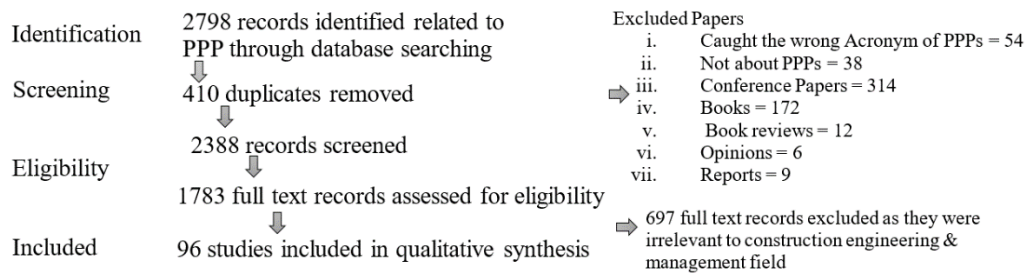


Figure 1 PRISMA flow diagram for literature dataset generation

After finalizing a dataset of 1783 articles relevant to PPP research in the field of CEM, articles relevant to stakeholder management and relevant themes were shortlisted based on the title, abstract and keywords. After manual assessment, a total of 96 articles were found relevant to the scope and problem statement of this research.

Analyses

Different analyses were conducted to achieve the three objectives of the study as shown in Figure 2. Since there is a limited cross over research available on the two areas, a focused content analysis of 21 studies was done on papers relevant to stakeholder theory, complexity theory and their application to management to develop a suitable recipe of integrated concepts for the areas of stakeholder management and PPP projects from CEM perspective. Four implications have been proposed based on their mutually complimenting observations which have been used as an inspiration in the thematic analysis and rationalization of stakeholder relationship dynamics. The underlying relationship dynamics between stakeholders in the context of PPP decision-making process have been rationalized considering issues identified from the content analysis of 96 relevant papers beforehand. For stakeholder identification and categorization for PPP projects, a frequency-based content analysis was performed. During the process, individual identified stakeholders belonging to a common group were merged using common terminology. Furthermore, four stakeholder groups were identified based on literature; public sector, private sector, general public and 3rd party (Yuan *et al.*, 2010).

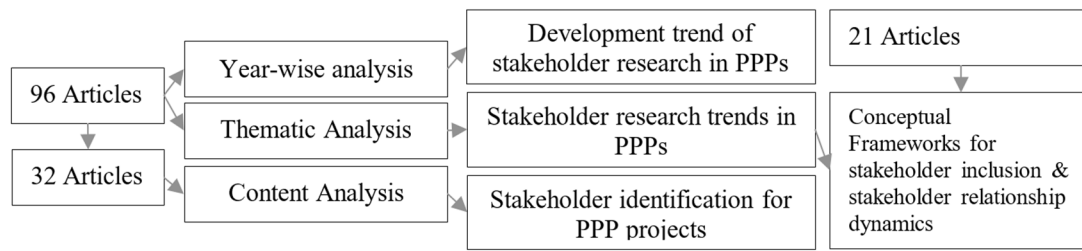


Figure 2 Meta-analysis framework of the study

These broader groups effectively reflect the key players in a PPP system as shown in Figure 3. Following this section, a thematic analysis of the stakeholder problem in PPP system is discussed. In doing so, the full-text of 96 relevant articles was analysed to study the research trends of stakeholder management related research in PPP. In focus were the key problems and issues related to stakeholder problem in PPP projects in construction based on which a conceptual framework for stakeholder inclusion in PPP decision-making has been proposed.

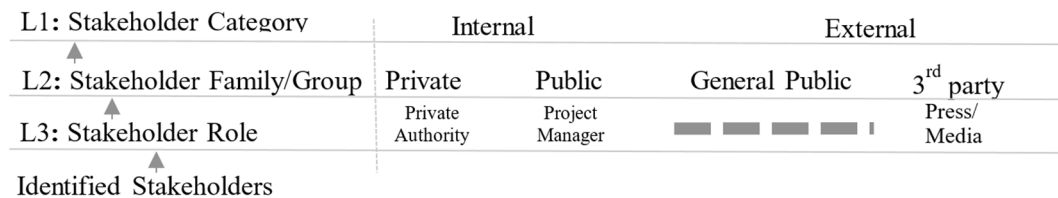


Figure 3 Methodological framework for stakeholder identification and classification

RESULTS AND DISCUSSION

Development Trend of Stakeholder Management Research in PPP

Stakeholder management was introduced as 10th knowledge area in PMBoK in 2013 (Rose 2013), due to which research in the field has gained momentum in its application to construction projects. However, fewer studies have been reported in relevance to PPP infrastructure projects (De Schepper 2014).

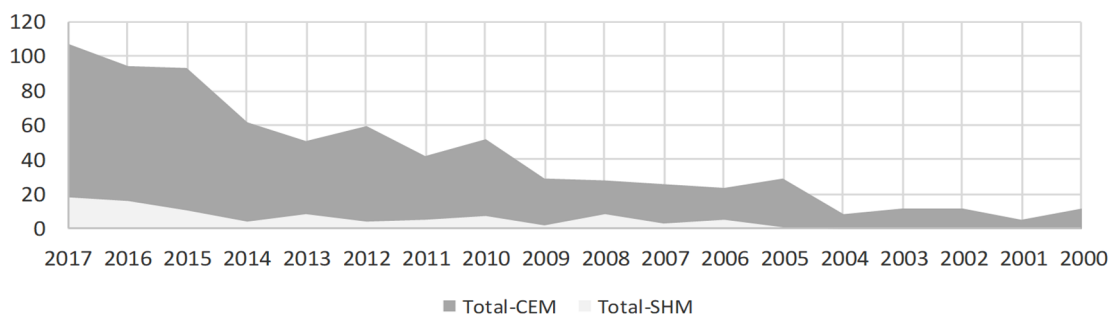


Figure 4 Year-wise PPP research development trend

As shown in Figure 4, though the number of papers/year are increasing signifying the enhancing interest and need (Neto *et al.*, 2016), the area still remains largely unexplored. Additionally, in the period 2000-2018, stakeholder management (SHM) relevant papers from the entire dataset of PPP research in CEM field constitute only 12%. Out of which, only 4% of the papers cover stakeholder management as a major research focus.

Stakeholder Identification and Classification

Stakeholder identification is the most crucial part of stakeholder management. Drawing on the implications from the complexity theory and stakeholder theory, two considerations need special attention during this process. One is to identify the maximum number of stakeholders and categorize them on basis of internal and external project environments. This will have a deep-rooted impact on the overall stakeholder analysis during which the stakeholder impacts can be assessed over the PPP life cycle. Two, legitimacy of stakeholder groups in the decision-making process can be more efficiently established in the contextual and dynamic PPP environment. A focused content analysis was carried out aiming at stakeholder identification and categorization to provide PPP decision makers a ground for conducting a thorough stakeholder analysis for infrastructure projects.

A comprehensive stakeholder taxonomy was developed, as shown in Table 1, identifying the three hierarchical levels given in Figure 3. It is pertinent to note that the public and private party having maximum frequency (f) in the internal stakeholder category, have a key role in driving the decision-making process. However, the stakes of other parties need to be taken into consideration while planning. For example, a project's location may be harming a cultural heritage site that may create tension on the internal-external project boundary, bringing local interest groups, in a key position to sabotage project success. In the content analysis, interest groups have the maximum frequency in 3rd party stakeholder role and it is categorized as an external stakeholder.

Table 1 Frequency based ranking of PPP stakeholders within their corresponding families of stakeholder roles

Group	Stakeholder Role	f	Group	Stakeholder Role	f	
Private sector	Private Authority	12	Public Sector (Internal)	Public Authority	15	
	Project Manager	6		Government establishment	10	
	Subcontractors	5		Project Manager	6	
	Investors/ Financier/ Banks /Businessmen	5		Consultants	4	
	Consultants	4		Quantity Surveyor	1	
	Contractor	4		Financial Manager	1	
	Engineers/ Architect/ Designer	4		Contract Manager	1	
	Property developers	2		Project Sponsor	1	
	Labor/ Union	2		Public Sector (External)	Line ministries and departments	3
	Supplier/ Vendor/ Service provider	2			Legal Authorities	2
Employees	1	Auditors	2			
		Technical Advisors	1			
General Public	General Public	10	3rd Party	NGOs/ Interest Groups	5	
	Customer/ End user	4		Civic Institutions / Municipality	2	
	Politicians/ Community representatives	3		Press/ Media	1	
	Landowners	1				

Conceptual Framework for Stakeholder Inclusion in PPP Decision-Making

The research concentration in SHM for PPP projects reveal that of the 96 relevant articles, only 32 address SHM or one of its core concepts as a major focus of research. However, stakeholder-relevant issues and their relevance to other areas of PPP decision-making have been addressed in the rest of the articles helping to understand the plaguing problems relevant to stakeholder in PPP projects and their possible solutions. Various research concentrations relevant to stakeholder were identified based on a detailed content analysis coupled with a frequency-based thematic analysis in which different topics were assigned a main and subtheme, as given in Table 2.

Table 2 Thematic analysis results

	Main theme	Total no. of papers	Sub-theme (with frequency greater than 1)	No. of Papers
1	stakeholder management process considerations	19	stakeholder satisfaction stakeholder perception stakeholder identification stakeholder expectations stakeholder attitude	6 4 2 2 2
2	stakeholder-related issues in decision-making	33	principal-agent problem conflicting stakeholder interests government opportunism issues information asymmetry trust and collaboration issues	7 7 6 5 4
3	stakeholder-related considerations in decision-making	40	role of stakeholders flexibility in contracts relationship considerations bargaining behaviour of stakeholders conflict management	9 7 7 6 3

The themes and sub-themes are interlinked and take feedback from one another. Collectively, the three inter-related main themes and sub-themes can be rationalized to form a working solution for stakeholder management inclusion in PPP knowledge expanse which be conceptualized as shown in Figure 5.

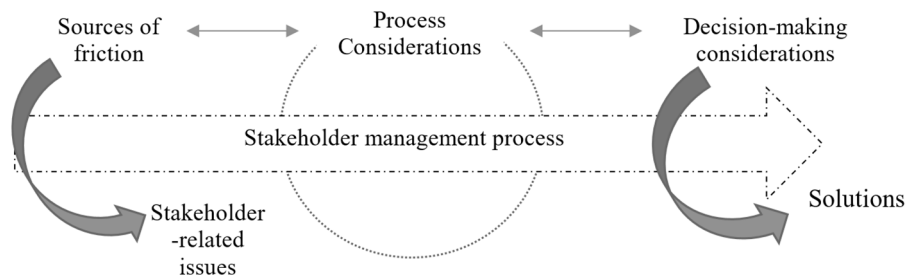


Figure 5 Generic conceptual framework for stakeholder-related PPP research

For example, in case of principal-agent problem (issue), the most important of stakeholder-related issues, conflicting interests between the principal and agent (source of friction), may lead to opportunistic behaviour in either agent or principal (issue) causing a variation in stakeholder attitude towards a decision (process consideration) as either supporting or opposing (Xie and Ng 2013). The private party may indulge in profit maximization (Pusok 2016); the government may extend limited or whole support to the project for gratification of their political agenda; while forsaking the wider social value creation (Zhu 2015) through the project (decision consideration), an important yet less addressed aspect of decision making. Principal-agent problem can further decrease stakeholder satisfaction levels (process consideration) for both internal and external stakeholders at different project stages orienting their risk behaviour (decision-making consideration), creating friction in stakeholder relationships (decision-making consideration). Introducing flexibility in PPP contracts (solution) has been abundantly discussed in literature as a possible solution for greater stakeholder inclusion (Cruz and Marques 2013) which resonates with the idea of expanding the contractual boundary, rationalizing a decision space across the internal and external environment of the project.

7. Conceptual mechanism of stakeholder relationships

Building upon the argumentation of the thematic analysis and the conceptual framework for stakeholder management inclusion in PPP decision-making system, it is to be noted that the relationship between stakeholders becomes the governing factor in any decision scenario. The dynamics of stakeholder relationships in the project

environment are rationalized in the form of a conceptual framework given in Figure 6 and Figure 7.

Figure 6 shows a unique graphical representation of decision-making in PPP life cycle. For any phase of the project, decision-making is a process expanded over a flexible decision space with external and internal actors interacting with each other and the project itself on a process and sub-process level reaching a decision point marked on the boundary of each phase. The decision point reflects the project milestone achieved to advance to the next stage of the project.

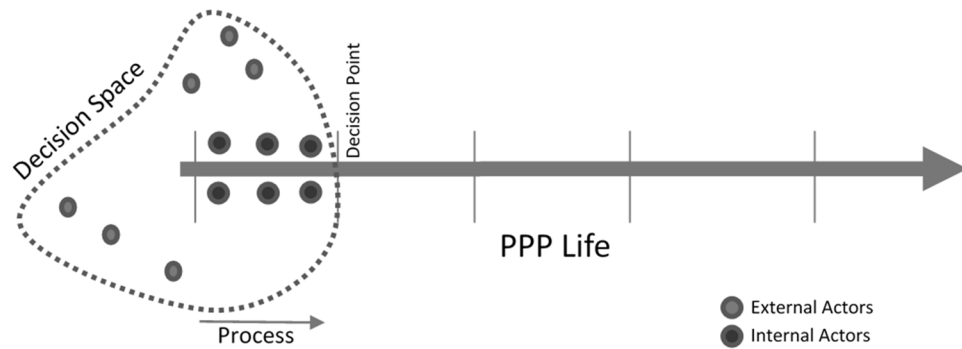


Figure 6 Decision space of the PPP life cycle phases

Furthermore, Figure 7 expands the decision space to uncover the dynamics to reach a decision point. Two basic types of stakeholder attitudes exist for every decision; opposing and supportive. The range of either opposition or support, however, can vary from high to low. Both types of attitudes are governed by constraints related to both stakeholders and the project itself which reflect in the quality of relationship. These constraints govern the level of friction in the relationship and in turn affect the probability of conflict occurrence, and the impact of the conflict on the system.

This phenomenon can be rationalized in terms of zones of conflict in the decision space shown in Figure 7.

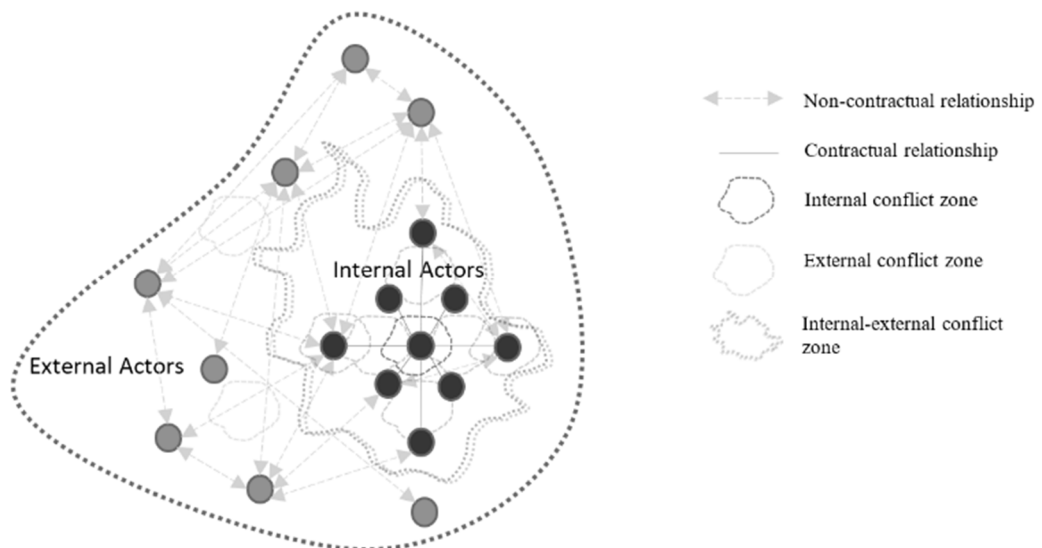


Figure 7 Dynamics of stakeholder relationships and classification of conflict zones

In case of PPP, conflicts can be inter-actor or intra-actor as given by the three types of conflict zones: between internal actors, between internal and external actors, and

between external actors. The reasons for conflict may vary according to the said types. Information asymmetry and principal-agent problem are the main kinds of issues where one of the contracting party's self-interest or greater level of information drives the decisions that may affect other internal actors and create a dilemma in effective risk allocation (Li and Cai 2017; Shi *et al.*, 2016). Additionally, private party's goal of profit maximization or the government's political interests may compromise public interest leading to public opposition (Lousberg 2016).

This may drive a chain reaction, where different interest groups may also clash with each other depending upon their own vested interests. Moreover, the boundary between the external and internal actors, as shown by the internal-external conflict zone, is particularly sensitive. This is because general public and several 3rd parties do not have proper understanding of the project impacts early on in the project life cycle. Their level of support or opposition to the project will, thus, increase or decrease as the project impacts start to materialize (Chen *et al.*, 2017). For example, climate change related hazards resulting from the project will affect multiple unidentified stakeholders who may not be in project's geographic proximity (Martimort and Straub 2016).

CONCLUSIONS AND RECOMMENDATIONS

The study has conceptually rationalized the stakeholder-relevant decision-making contributions as a first step in the integration of stakeholder management knowledge area in PPP research along with providing a deeper look into the relationship dynamics and mechanism of conflict emergence. To deal with the interrelated issues, different conflict zones have been earmarked. For different phases of project life cycle, and for different stakeholders, these conflict zones can be used to perform a more efficient stakeholder analysis and design suitable conflict prevention mechanisms for proactive stakeholder management practice integrated with contract management. This can prevent the cost and time overruns that are caused if a project goes into litigation. It must be noted that the proposed conceptualization is a generic baseline rationalization which can be sophisticated to act as a framework for conflict prevention and stakeholder integration in PPP decision-making. Expert opinion and case study demonstrations can be used to develop a PPP stakeholder analysis framework which can be directly used while making decisions at different stages of project life cycle. Sectoral variation in legitimacy of stakeholders, types of conflict and their impact can also be compared in future. The current study has employed concepts of complexity theory and stakeholder theory. To further develop this work, refined analytical tools of system dynamics, fuzzy logic, and agent-based modelling can be used to assess the robustness of the subjective rationalization as well as its further sophistication.

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