

Development of Framework to Enhance Public-Private Partnerships (PPP) Project Success Through Sustainable Stakeholder Relationships; Case of Unsolicited PPP Projects

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Abstract

Infrastructure plays an essential role in the economic development of a country. Hence, the prevailing global infrastructure gap has succeeded in promoting the adoption of the PPP concept for construction projects due to its tremendous advantages in terms of risk-sharing, creativity, innovation, and public sector budgetary constraints. This enormous interest of the governments towards the PPP emphasises the requirement of more investigations on the successful implementation of PPP construction projects. Accordingly, many researchers have been identified that stakeholder opposition results in many failures in PPP project performances. However, limited studies have been focused related to successful stakeholder management in PPP projects worldwide. Therefore, there is a need for an in-depth investigation of stakeholders and their relationships in PPP projects to facilitate sustainable relationships to improve project success.

A qualitative survey strategy was adopted to achieve the established objectives of this study. Data was collected through semi-structured interviews which were conducted under two rounds. Interviews were conducted with thirty responders per each round which totalled to sixty interviews with construction experts. Finally, these data were analysed using content analysis technique and social network analysis technique. Findings of this research indicate that the government, contractor, consultant, and end-users are the essential stakeholders in PPP projects. Social network diagrams developed under categories of contractual, financial, information exchange and performance incentive relationships provide clear visual on stakeholder relationships in PPP projects. Furthermore, success factors of stakeholder relationships were identified to improve stakeholder management in PPP projects, and strategies were suggested to minimise existing barriers and maximise facilitators in achieving those success factors. Moreover, the developed conceptual framework provides an approach to be followed by industrial practitioners to achieve sustainable stakeholder relationships in PPP construction projects in Sri Lanka.

Keywords: Public-Private Partnerships, Stakeholders, Stakeholder relationships, Critical success factors, Strategies

INTRODUCTION

Infrastructure contributes immensely to the economic growth of a country through its tremendous outputs including the development of the construction industry, trade reduction, and poverty reduction (Nathan Associates, 2017; Oktavianus, et al., 2018). However, prevailing shortages in confronting sufficient resources have been resulted in growing a vast infrastructure gap, mostly in low-income countries (Nathan Associates, 2017). Hence, many countries have been keen to seek the hands of the private sector for the development of their infrastructure (The World Bank Group, 2016). Accordingly, PPP have been internationally recognised as an innovative procurement system that has gained significant popularity and consideration in approaching global demand for infrastructure services (Robert & Albert, 2016). Similarly, Sri Lanka also has adopted PPP as one of the most successful alternative funding methods for their lower rate of investments available due to insufficient foreign and private investments (Finance Commission of Sri Lanka, 2018).

PPP unit of South Africa has described PPP as a relationship between public and private sectors in which the private sector provides its support for the risk management in the design, finances, building, and operation of a government project (PPP Unit, 2019). However, PPP construction projects have become more complicated due to its long contract period, extensive services involvement, and complicated stakeholder relationships (Zou, et al., 2014). Hence, compared to other types of projects, the essence of stakeholders plays a crucial role in PPP construction projects. Accordingly, the selection of stakeholders for the team and managing their relationships can be identified as the essential elements in a successful PPP project (Amadi, et al., 2017). However, multiple party involvement, multiple expectations of stakeholders and public sector involvement in PPP projects have made these relationships management more challenging and complicated (Li, et al., 2018).

RESEARCH GAP

Continuous report of failures in PPP projects has become one of the most controversial and much-disputed subject within the worldwide construction industries (Hodge & Greve, 2017). Although many studies have been carried out on solving this matter, the rising interest of countries on PPP and their failures emphasises the more requirement of investigations on the successful implementation of PPP projects.

So far, many studies have been conducted on enhancing PPP construction project performances through recognising critical success factors of project performance, risk factors, advantages and disadvantages, stakeholder performance objectives and barriers of PPP projects (Tang, et al., 2009). Moreover, many researchers have identified that stakeholder opposition results in many failures in PPP project performances (Amadi, et al., 2018). Accordingly, focusing on stakeholders, stakeholder relationships and stakeholder management have recognised as crucial for PPP project success (El-Gohary, et al., 2006).

However, limited researches can be seen on stakeholder management in PPP projects to date in worldwide (Schepper, et al., 2014). So far, none of the researches has attempted to carry out an in-depth investigation of actual stakeholder relationships in PPP projects. Therefore, there is a need for an in-depth investigation of stakeholders and their relationships in PPP projects to facilitate sustainable relationships to improve project success.

AIM AND OBJECTIVES

The aim is to investigate how to facilitate sustainable stakeholder relationships for the success of PPP infrastructure projects in Sri Lanka.

The objectives were identified as

- To review the concepts of PPP and stakeholder relationships
- To identify key stakeholders involved in PPP construction projects in Sri Lanka
- To investigate relationships between different stakeholders of PPP construction projects in Sri Lanka
- To investigate critical success factors of stakeholder relationships for the success of PPP construction projects in Sri Lanka
- To recommend suitable strategies to improve stakeholder relationships for the success of PPP infrastructure projects in Sri Lanka
- To propose a framework to facilitate sustainable stakeholder relationships in PPP infrastructure projects in Sri Lanka

LITERATURE REVIEW

Public-Private Partnerships

PPP have emerged as an efficient alternative approach of public funding which was traditionally under the responsibility of governments (Mital & Mital, 2019). Although it has

earned global popularity in the 1980s, the concept of PPP has been invented many years back in the Roman Empire (Nathan Associates, 2017). However, different researches, associations and governments have given a range of definitions for this concept. The World Bank (2018) has defined PPP as a legally enforceable agreement between private and public parties which is formed to deliver infrastructure successfully by transferring substantial risk and management responsibilities to the private party. Furthermore, Nathan Association (2017) has identified this as a shifting of the government rights on infrastructure development and operation to the private sector for a fixed duration under specified conditions. Moreover, PPP has been defined as a relationship between the private and public sectors, which aims to use the expertise and innovative capabilities of the private sector for the development of public sector assets and services (Thomas & Thomas, 2017). For this study, followings can be identified as the most important features from the above discussion for a complete expression of PPP.

- Legally enforceable agreement between private and public sectors
- Fixed long-term duration under specified conditions
- Aim to deliver a quality infrastructure facility
- Incorporate capabilities and experts of the private sector

Initiating PPP Projects

Growing capital insufficiencies and higher expenditures on liabilities of the governments have resulted in funding on increasing global infrastructure needs more unbearable for them (Roumboutsos & Pantelias, 2014). With the rise of debts nearing 80% of Gross Domestic Product in Sri Lanka, it has been recognised that relying on public debts is an unsustainable approach for infrastructure investments (National Agency for Public Private Partnership, 2018). This issue has brought the interest of Sri Lankan government in getting the private sector involvement for infrastructure investments as they have understood it as a social responsibility of private sector in addition to creating revenues (Finance Commission of Sri Lanka, 2018). Accordingly, PPP have emerged as an innovative procurement system in the construction industry to fill those infrastructure gaps available in the countries (Weththasinghe, et al., 2016). However, the success of many PPP infrastructure projects has been noted questionable in Sri Lanka (National Agency for Public Private Partnership, 2018).

There are two typical initiating approaches of PPP projects as solicited and unsolicited proposals (Yun, et al., 2015). Here, solicited proposals can be identified as the proposals that are drafted by the public sector corresponding to their development strategies and seek the

support of private sector in finances (Kim, et al., 2011). Furthermore, unsolicited proposals which were initiated and submitted by the private investors to get business opportunities, have the potential to introduce both beneficial ideas and risks to the project (Queiroz, 2007).

Performance of PPP Projects

Currently, PPP have been broadly implemented in the construction industries of both developing and developed countries (Yun, et al., 2015). However, the success of PPP projects appeared continuously questionable (Hodge & Greve, 2017). Kwak, Chih, & Ibbs (2009) have identified that some governments experienced negative consequences of implementing PPP projects. Accordingly, performances of some PPP projects have been recorded lower to the expected level (Mladenovic, et al., 2013). Thus, the interest of many researchers has focused to the success of PPP project performances, and most of the success factors identified by them were interrelated to the stakeholders and their relationships (Osei-Kyei & Chan, 2015). Hence, it emphasis the requirement of maintaining sustainable stakeholder relationships for the success of PPP projects.

Stakeholders in PPP Construction Projects

Stakeholders can be categorised into two as internal stakeholders and external stakeholders (Amadi, et al., 2017). In PPP construction projects, these two categories can be further divided into four categories based on their participation, as shown in Figure 1.

Internal Stakeholders		External Stakeholders	
Public Parties	Private Sector	General Public	Research Group
Important decision makers of the project	Implementors in the project	People who are affected by the project or end users	Observe and provide suggestions on PPP projects

Figure 11:Stakeholders in PPP Construction Projects

Source: (Yuan, et al., 2010)

Accordingly, the public sector, private sector, general public and research group are the main stakeholders of PPP projects. However, many stakeholders can be identified under these main four categories also. Table 1 presents various stakeholders in PPP projects categorised under the main two categories; internal and external.

Table 44:Stakeholders in PPP projects

Stakeholders	References					
	1	2	3	4	5	6
Internal stakeholders						
Public party	*		*			
Government		*	*			*
Private parties	*	*				
Contractors			*	*	*	*
Sub-contractors			*			
Suppliers			*			*
Designers			*			
Consultants			*			
MDBs (Multilateral Development Banks)	*			*		*
BLAs (Bilateral Agencies)				*		*
International organisations	*					
Grantor				*		
Lenders				*	*	*
Project Company (SPV)				*	*	*
Export Credit Agencies				*		*
Input supplier				*		*
Operator				*	*	*
Sponsors					*	*
Insurance company					*	*
External stakeholders						
General public		*				
Project affected group (End users)		*	*			
Professional organisations/ Universities		*				
Pressure groups (NGOs)		*				

References- { 1-(World Economic Forum,2018)/2-(Li, et al.,2013)/3-(Yuan, et al.,2010)/4-(Delmon,2017)/5-(Kurniawan, et al.,2014)/6-(Chowdhury, et al.,2011) }

Accordingly, sixteen internal stakeholders and four external stakeholders in PPP projects were identified through various studies. However, it is essential to recognise relationships between them for sustainable stakeholder management in PPP projects.

Stakeholder Relationships in PPP Construction Projects

Well established stakeholder relationships are essential for project success as it upgrades the project value to the stakeholders (Oppong, et al., 2017). Accordingly, many prior studies have been anticipated insufficient communication among stakeholders and inconvenience in recognising “invisible” stakeholders as leading causes for the failures in the construction projects (Yang, et al., 2009). According to Pryke (2004), stakeholder relationships in construction projects can be categorised as follows.

- Contractual relationships
- Performance incentive relationships
 - For effective performances
- Information exchange relationships
 - Client requirements
 - Design activities
 - Progress management
 - Financial management

Stakeholders involved in construction projects should have a legal right to participate and receive benefits from its challenging performances (Delmon, 2017). Hence, contractual relationships are the most common strategy using to share and allocate risk among stakeholders in the construction industry (Lam, et al., 2007). According to Pinto, Slevin, & English (2009), reliable contractual relationships can facilitate strong information exchange relationships among project stakeholders. Hence, construction project structures have developed, including numerous information exchange relationships encouraged by contractual and performance incentive relationships (Pryke, 2004).

Lack of stakeholder interactions has resulted in misunderstanding and conflicts between the project team (Schepper, et al., 2014). Hence, strong stakeholder relationships between the public sector and private sector have been identified as the most vital factor for the successful implementation of PPP projects (Tang, et al., 2009). However, government involvement as the main stakeholder has made these relationships more special and unique from other projects (Zou, et al., 2014). Figure 2 shows the contractual structure of a PPP project.

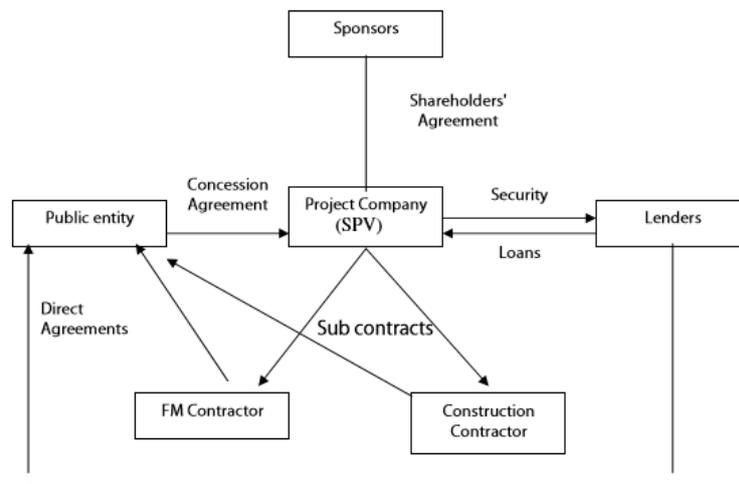


Figure 12: Contractual Relationships

Accordingly, different types of contractual agreements in PPP projects can be identified as concession agreements, direct agreements, shareholders' agreements and financial agreements. Figure 3 shows the basic PPP structure based on contractual and financial agreements among stakeholders.

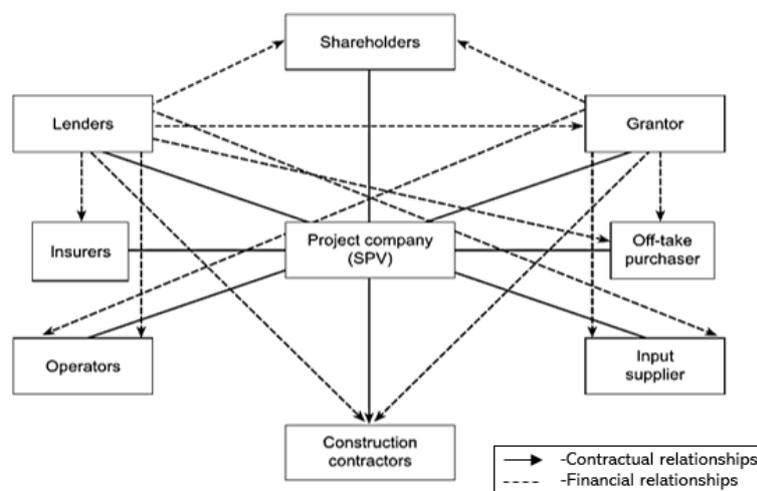


Figure 13: Basic PPP Structure

Source: (Chowdhury, Chen, & Robert, 2011)

Figure 2 and Figure 3 show a similar structure of contractual agreements. However, Figure 3 demonstrates the difference between contractual relationships and financial relationships in PPP project structure. Hence, it emphasises the importance of studying both contractual and financial agreements between stakeholders in PPP projects. Therefore, the categorisation of stakeholder relationships identified by Pryke (2004), can be modified as follows.

- Contractual relationships

- Financial relationships
- Performance incentive relationships
 - For effective performances
- Information exchange relationships
 - Client requirements
 - Design activities
 - Progress management
 - Financial management

However, the identification of key stakeholders involved in PPP projects and relationships among them has become more critical for sustainable stakeholder relationships in PPP (Li, et al., 2018). Although many studies have been conducted on stakeholder management in PPP, so far, a minimal number of studies can be seen on stakeholder relationships. However, previous researches have identified that successful stakeholder relationships can be achieved through proper management (Tang, et al., 2009).

Relationship management in PPP can be described as adopting appropriate strategies and procedures to facilitate sustainable relationships among stakeholders to optimise project value (Zou, et al., 2014). However, so far little attention has been paid for the relationship management in PPP, and many of the existing studies were conducted more than ten years back. However, no attempts were taken focusing on PPP infrastructure projects in Sri Lanka.

Success Factors (SF) of Relationship Management in PPP

Development of healthy communication tactics and strategies to improve stakeholder morals play a vital role in project success (Zou, et al., 2014). Therefore, it is crucial to focus on the success factors of relationship management in PPP and Table 2 provides CSF (Critical Success Factors) generally identified for relationship management in previous studies.

Table 45: SF of relationship management

SF	References			
	1	2	3	4
Effective and constant communication	*	*	*	*
Managing stakeholders with social responsibilities		*		
Exploring stakeholder needs to project		*		

Understanding stakeholder interest area		*		
Proper identification of stakeholders		*		
Keeping and promoting better relationships		*		
Gain and pain sharing			*	
Trust			*	
No blame culture			*	
The strong and capable project team	*			
Commitment and participation of senior executives				*
Partnering Skills	*		*	
Defining the objectives of the relationship management strategies				*
Integration of the division of the organisation				*
Effectiveness of dispute resolution	*	*	*	*
Statement of the project mission		*		*
Meeting the estimated project duration	*			
Assessing stakeholder behaviours		*		
Clear roles and responsibilities	*	*		
Formulating appropriate strategies		*		
Analysing the changes in stakeholder influences and relationships		*		

References- {1-(Thomas & Thomas,2017)/2-(Yang, et al.,2011)/3-(Meng,2012)/4-(Zou, et al.,2014)}

Effective and constant communication and effectiveness of dispute resolution are the most identified critical success factors of relationship management. However, it is difficult to judge their importance with available limited sources.

RESEARCH METHODOLOGY

Data related to stakeholder relationships can be differed depending on the project structure. This emphasized the importance of adopting a research process that can investigate deeper on social behaviours with limited resources. Figure 4 shows the process developed for this study. The literature review was conducted to achieve objective 1 of this research. A qualitative approach can be identified as one of the best methods for experimenting with social practices and performances (Addo & Eboh, 2014). Therefore, a qualitative approach was adopted in achieving objective 2,3,4,5 and 6 of this research.

Surveys allow gathering information that defines the characteristics of a large sample related to the study area in lesser time (Ponto, 2015). Accordingly, considering the limited time given for the research and in-depth explanations required, a qualitative survey strategy was selected to conduct this research. Here, sixty semi-structured interviews were conducted in two rounds. 2nd objective of this study was achieved through the first round of interviews. Then the findings were used in preparing interview guideline for the second round to achieve objective 3 to 6.

Stakeholders involved in PPP projects and their relationships can be differed along with the project structures, organisational structures, regulations, policies, technologies, procurement methods and procedures involved. Hence, it is essential to select a similar type of projects. Moreover, the selection of respondents from ongoing projects allows gathering more accurate data on relationships with their fresh knowledge on the project. Table 3 shows the summarised details of the selected projects.

Table 46: Summarised details of the selected projects

	Description
Project type	Unsolicited PPP Road Projects
Employer	Government Authority Head Office
Consultant	Government authority project office
Contractor	Local C1 Contractor
Financier	Local Bank

The snowball sampling method, which comes under non-probability sampling, was used to select sampling units from the population to collect data.

Qualitative data were analysed using content analysis technique. The software NVivo was used in coding and simplifying gathered data for content analysis. Ordinal data collected through Likert scales were summarised and analysed using statistical mode. Social network analysis technique which interprets a project as a system and focuses on relationships in it selected as the most appropriate technique for mapping stakeholder relationship models (Yang, Shen, & Ho, 2009). Hence, this technique was adopted to achieve objective 3 of the research. Accordingly, social network diagrams were developed using Social Network Visualizer software, and frequency of communication links was used as the measurement of strength. In analysing data, mode of the responses was considered as the most appropriate measurement of the strength of a particular relationship. Information exchange and performance incentive

relationships were analysed to a model of Frunchterman Reingold which based on a force-directed algorithm using the software. Finally, a conceptual framework was developed using findings to enhance PPP project success through sustainable stakeholder relationships.

DATA ANALYSIS AND RESEARCH FINDINGS

Identification of Key Stakeholders Involved in Selected PPP Unsolicited Projects

The respondents were requested to comment on the list of PPP project stakeholders identified through the literature review (refer Table 1). Here, they were required to identify the stakeholders involved in their projects from the list and rate them according to their perceived importance to their projects. Moreover, they were expected to improve the list by adding any additional stakeholders to the list. The stakeholders selected as not important by 70% (i.e. 21 responses from 30) or more respondents were removed from the list, and the stakeholders mentioned as very important by 70% or more respondents were considered as the key stakeholders of the PPP projects. Findings were summarized in Table 4 to get a clear interpretation of the collected data.

Table 47: Data analysis of objective 1

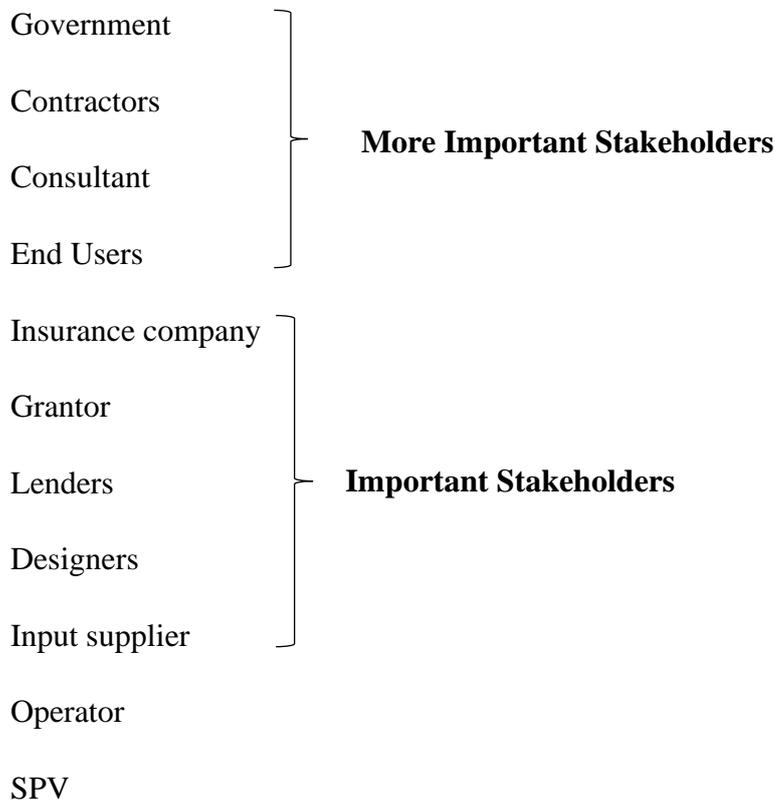
(V-Very Important/I-Important/S-Somewhat important/L-Little important/N-Not important)

Stakeholders	Level of Importance				
	V	I	S	L	N
Government	100%				
Contractors	100%				
Sub-Contractors					100%
Designers	16.66%	83.34%			
Consultants	100%				
MDBs					100%
General Public (Project affected group)		36.67%	43.33%	10%	10%
BLAs					100%
Grantor	26.27%	73.37%			
International organisations					100%
Lenders		83.34%	13.33%		3.33%

End users	76.66%	23.34%			
Input supplier	16.66%	73.34%	10%		
ECA's					100%
Operator			36.67%	63.33%	
NGOs					100%
Sponsors					100%
SPV			70%	30%	
Insurance company	26.67%	73.33%			

- Stakeholders removed from the list
- Key stakeholders of the selected projects

The government, consultant, contractors and end-users were found as the very important stakeholders of the PPP infrastructure projects in Sri Lanka. However, designer, grantor, lender, input suppliers and insurance company found to be important stakeholders of the project. Accordingly, moderated stakeholder list of PPP infrastructure project in Sri Lanka is as follows.



General Public

The government, contractor, consultant and end-users can be identified as key stakeholders in PPP projects of Sri Lanka. However, public entity, private entity and end-users have been identified as key stakeholders of the PPP project in the literature. Accordingly, these findings evident that the key stakeholders of PPP projects in the Sri Lankan context were much similar to the key stakeholders in the international context. However, end-users were not involved in the implementation of PPP projects. Hence, only the government, contractor and consultant were considered in achieving objective 3.

Developing Social Network Diagrams for Stakeholder Relationships

Data were gathered under contractual relationships, financial relationships, information exchange relationships and performance incentive relationships as identified in the literature review. Professionals were requested to rate communication relationships, considering how often they communicate with each other during given situations. Mode of the data set was used for the development of social network diagrams. Relationships between stakeholders were visualised using Social Network Visualizer software for better understanding, as shown in Figure 4 to 13.

Contractual Relationships:

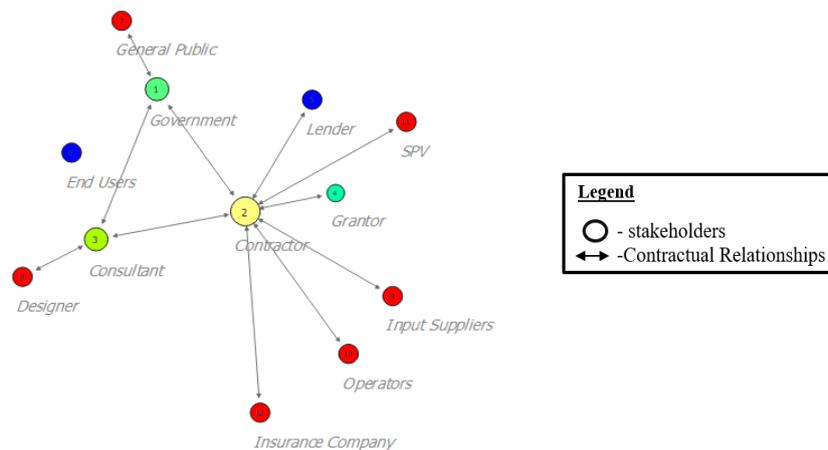


Figure 4: Contractual relationships

Financial Relationships:

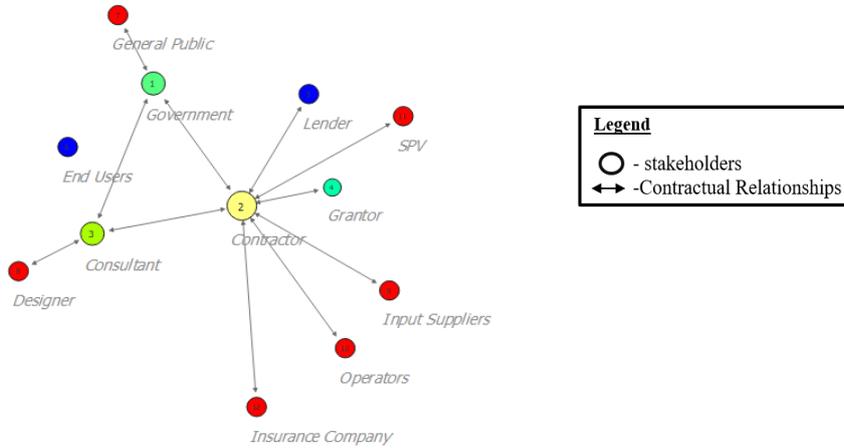


Figure 5: Financial relationships

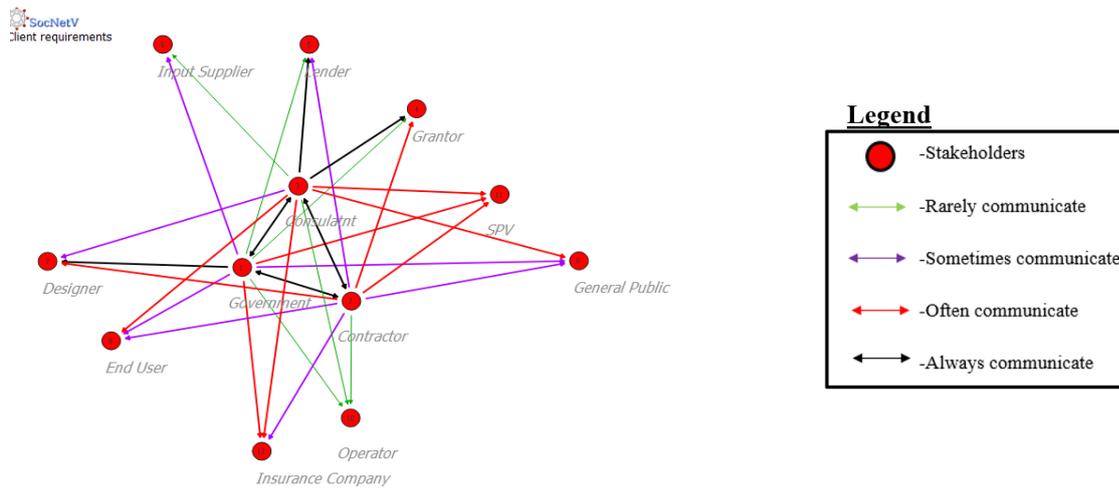


Figure 6: Clients' requirements

Information Exchange Relationships:

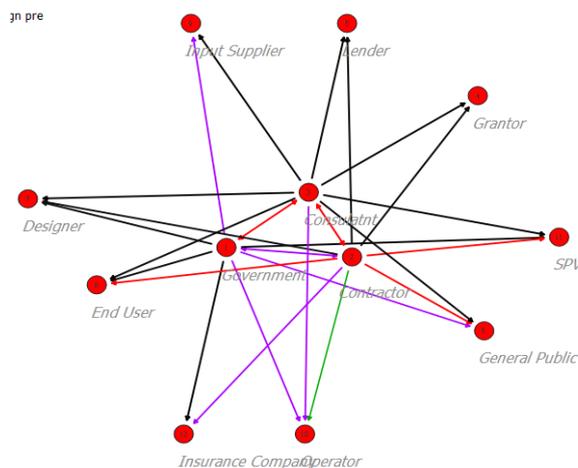


Figure 7: Design activities during the pre-contract period

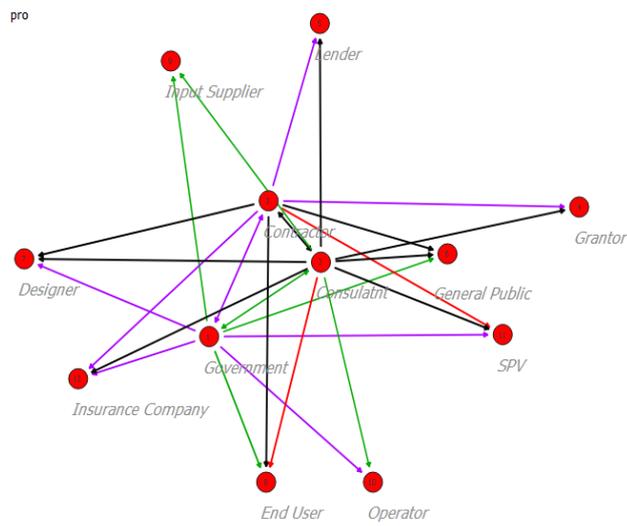


Figure 8: Design activities during the post-contract period

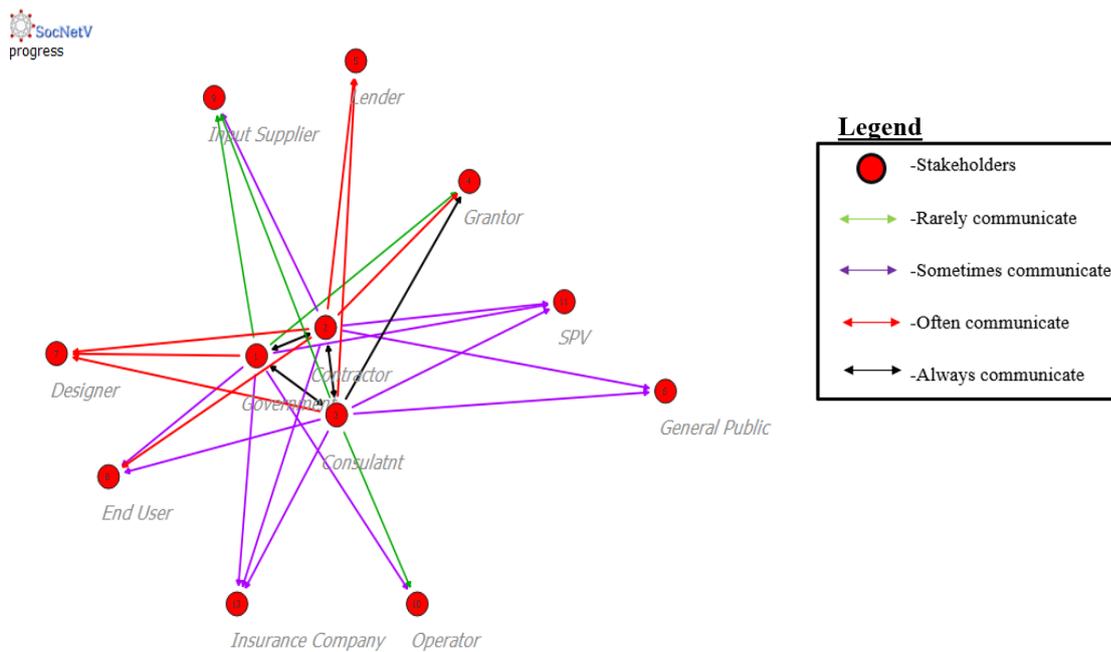


Figure 9: Progress Management

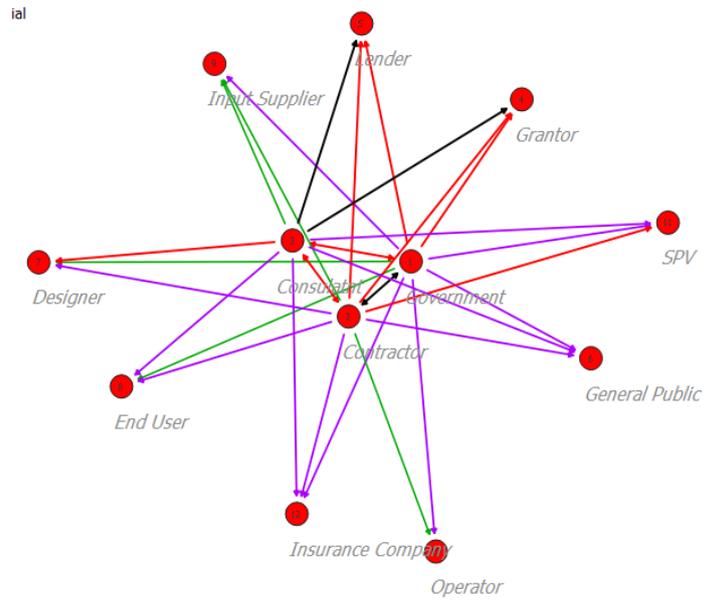


Figure 10: Financial management

Performance Incentive Relationships:

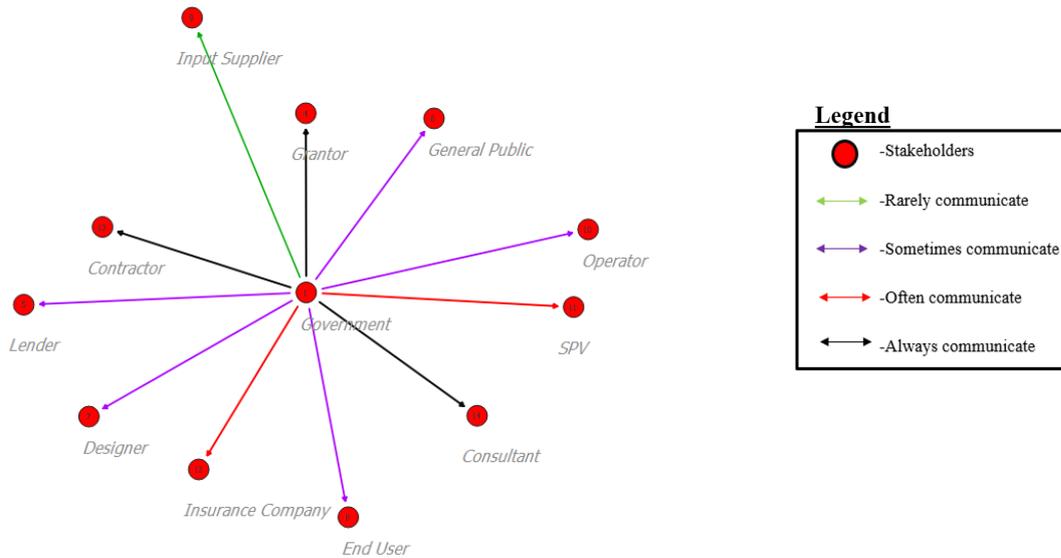


Figure 11: Communication relationships with the government in project implementation work

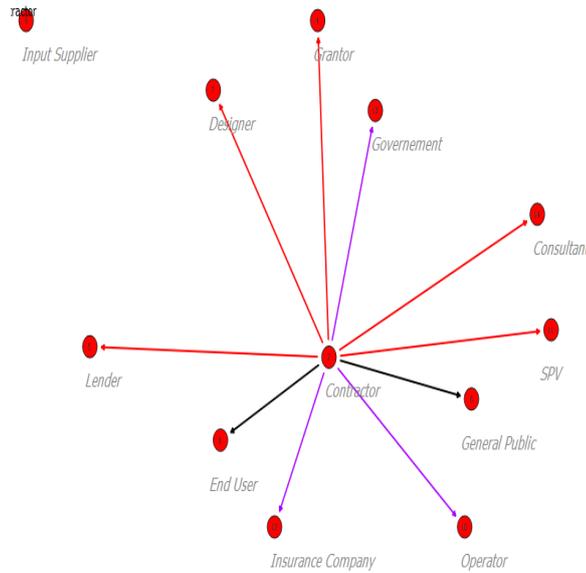


Figure 12: Communication relationships with the contractor in work related to the local government organisation

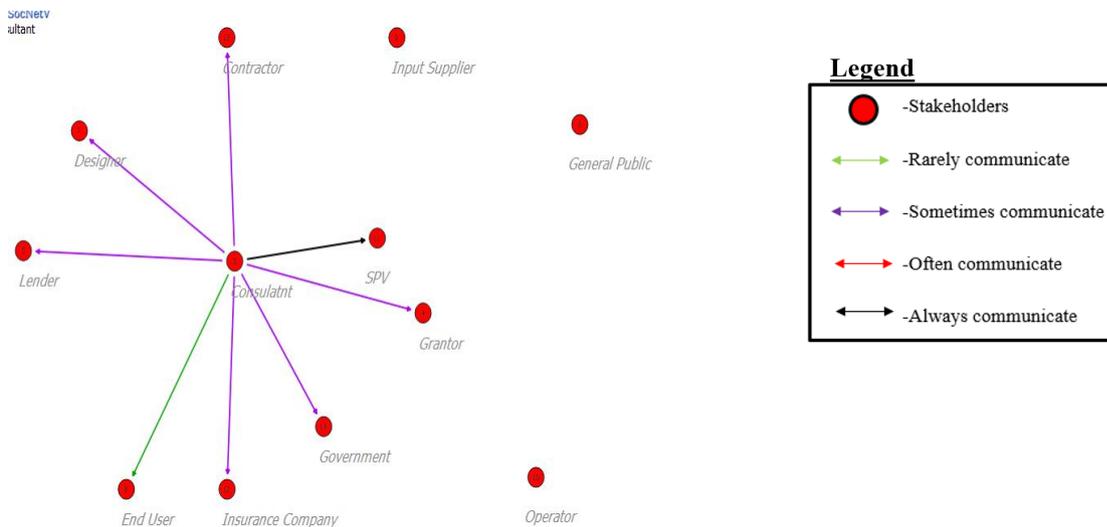


Figure 13: Relationships of the consultant in interacting with senior managers of other projects

SF of Stakeholder Relationships Management

Professionals were requested to comment on the critical success factors of stakeholder relationships management which were identified through the literature review. Here, comments were based on their importance for the success of PPP projects in Sri Lanka and their availability in selected PPP projects. Table 5 presents the importance and availability of each SF to the PPP projects in Sri Lanka.

Table 48: Importance and availability of SF

(Very Important-VI/Important-I/Somewhat Important-SI/Extremely Available-EA/Available-A/Somewhat Available-SA/Little Available-LA)

SF	Level of Importance	Level of Availability
Effective and constant communication	VI	A
Managing stakeholders with social responsibilities	I	A
Exploring stakeholder needs to project	SI	SA
Understanding stakeholder interest area	VI	EA
Proper identification of stakeholders	VI	A
Keeping and promoting better relationships	I	SA
Gain and pain sharing	SI	LA
Trust	VI	A
No blame cultures	SI	SA
Strong and capable project team	VI	EA
Commitment and participation of senior executives	I	A
Partnering Skills	SI	SA
Defining the objectives of the relationship management strategies	SI	SA
Integration of the division of the organization	I	A
Effectiveness of dispute resolution	VI	EA
Statement of the project mission	I	A
Meeting the estimated project duration	VI	SA
Assessing stakeholder behaviours	I	A
Clear roles and responsibilities	VI	A
Formulating appropriate strategies	I	A
Analysing the changes in stakeholder influences and relationships	I	SA

 - Factors that have discrepancies between importance and availability

Eight success factors were found to be very important for stakeholder relationship management, while 3 of them were available to the expected level in PPP projects. Hence,

those eight very important success factors can be identified as critical success factors of stakeholder relationship management in PPP projects in Sri Lanka.

- Effective and constant communication
- Understanding stakeholder interest areas
- Proper identification of stakeholders
- Trust
- The strong and capable project team
- Effectiveness of dispute resolution
- Meeting the estimated project duration
- Clear roles and responsibilities

Although the gap between the level of importance and availability was unknown, comparison between the importance of SF to PPP infrastructure projects in Sri Lanka and availability of those factors in projects illustrate noticeable discrepancies in more than one-third of factors. Accordingly, 8 factors were recognised below the expected level of availability in projects. Respondents declared that facilitators and barriers to maintaining sustainable relationships within their projects causes these discrepancies. Accordingly, Figure 14 and 15 shows the facilitators and barriers identified by them.

Name	Files	References
Facilitators for sustainable stakeholder relationships	30	225
specify the cash flow with respect to project period	3	3
Proper management system for stakeholder relationships	11	11
Giving an early view of the risks and issues to the stakeholders	16	16
Data management system for key information	17	17
Maintain the infrastructure facilities to implement the project work on time	18	18
Identification of the resources plan as schedule of work	21	21
Clear communication of project scope	21	22
Trust from the beginning of the project	28	28
Monitor the project output frequently	29	29
Identification of the project scope of work accurately	30	30
Gathering as a group	30	30

Figure 14: Facilitators to sustainable stakeholder relationships

Name	Files	References
Barriers for sustainable stakeholder relationships	30	221
Cultural or language barriers	6	6
Project scope changes and quality	8	8
Inadequate resources with respect to project planning	12	12
Project manager's unfamiliarity with Stakeholder Management process	15	15
Project cost increase	18	18
Less communication between the government and public organisations	23	23
Stakeholders are sometimes not able to participate with the meetings	24	24
Project managers incapability	26	26
Conflicts between stakeholders	29	29
Political influence	29	29
Project delays	30	30

Figure 15: Barriers to sustainable stakeholder relationships

This emphasises the requirement of more attention and strategies in Sri Lankan PPP projects to achieve success.

Strategies to Improve Stakeholder Relationships

Thirteen strategies which facilitate to improve stakeholder relationships in Sri Lankan context were identified through the interviews.

1. Conducting a proper stakeholder analysis during the project life cycle
2. Communicate and interact with all stakeholders
3. Conducting an in-depth analysis of the political opportunity structure
4. Rank stakeholders
5. Clearly identification of the scope of project and duration of the project with respect to the project estimate
6. Ensure the same information sharing process to all stakeholders
7. Improve the trust between parties
8. Have a good understanding of each other's objectives
9. Identify concerns of each stakeholder
10. Identify long term stakeholder issues
11. Identify relationships between stakeholders

12. Conducting periodic stakeholder meetings

Development of a Framework

A conceptual framework is a tool that represents the track records of the study and concepts while providing a better meaning to the findings by improving adequacy to the theories and ensuring generalisability (Adom, et al., 2018). Hence, a conceptual framework was developed using the findings of the study to provide a better interpretation. The developed framework includes identified stakeholders, their relationships, SF to maintain those relationships sustainably, barriers and facilitators to achieving those SF and strategies for the achievement of those SF in PPP infrastructure projects in Sri Lanka. The conceptual framework developed in this study is attached as Appendix 1.

CONCLUSION

Having sustainable stakeholder relationships can be identified as key to the success of PPP projects. However, the literature review clarifies that the attention paid to improve stakeholder relationships in Sri Lanka was not sufficient to achieve PPP project success. It further explains that Sri Lanka is in a requirement of identifying bottlenecks of stakeholder relationships to improve their performances in the infrastructure projects success. Hence, this study was carried out to facilitate sustainable stakeholder relationships for the success of PPP infrastructure projects in Sri Lanka.

According to research findings, the government, contractor, consultant, and end-users can be identified as key stakeholders in PPP projects of Sri Lanka. There are mainly four types of stakeholder relationships as contractual, financial, information exchange, and performance incentive relationships in PPP projects of Sri Lanka and different networks of interactions can be identified in each type.

It is essential to consider the success factors of sustainable stakeholder relationships to achieve the success of PPP projects in Sri Lanka. There are various barriers and facilitators in achieving identified success factors of stakeholder relationships in Sri Lanka. However, these barriers can be overcome, and facilitators can be achieved using multiple strategies. The developed framework in this study can be used to enhance PPP project success through sustainable stakeholder relationships in Sri Lanka.

RECOMMENDATIONS

This research contributes to increase the level of understanding and knowledge on the stakeholders, stakeholder relationships, and the way of achieving sustainable stakeholder relationships in PPP construction projects in Sri Lanka. The framework developed in this research enables organisations and stakeholders involved in PPP construction projects in Sri Lanka to facilitate sustainable stakeholder relationships for the success of their projects.

The government can adopt strategies identified in this research to minimise the barriers of stakeholder relationships, which were identified in their ongoing projects. This allows the public sector to reduce the infrastructure gap in Sri Lanka through an effective and efficient process. Moreover, industry practitioners can use these findings to conduct stakeholder analysis, which includes the identification of stakeholders, their relationships, and their roles and responsibilities during the project life cycle. Accordingly, They can identify key stakeholders in their PPP projects and

get clear visualisation on relationships between them during the initial stages of the projects. This allows them to plan PPP projects with effective stakeholder relationships, data flowing methods, and division of authorities, which minimise disputes and results in project success.

REFERENCES

- Addo, M. & Eboh, W., 2014. Qualitative and quantitative research approaches. In: *The Essence of Nursing and Healthcare Research*. s.l.:SAGE, pp. 137-154.
- Adom, D., Hussein, E. K. & Joe, A.-A., 2018. Theoretical and conceptual framework: Mandatory ingredients of quality research. *International Journal of Scientific Research*, 7(1), pp. 438-441.
- Amadi, C., Carrillo, P. & Tuuli, M., 2017. *Stakeholder management in public private partnership projects in Nigeria: towards a research agenda*. Portsmouth, Great Britain, Association of Research in Construction Management, pp. 423 - 432.
- Amadi, C., Carrillo, P. & Tuuli, M., 2018. Stakeholder management in PPP projects: external stakeholders' perspective. *Built Environment Project and Asset Management*.
- Atalia, G. et al., 2015. *Public-private partnerships and the global infrastructure challenge*, s.l.: EY publications.
- Bhirud, A. N. & Vasant, K. G., 2015. Analysis of critical success factors for application of public private partnership in real estate. *International Journal on Recent and Innovation Trends in Computing and Communication*, 3(2), pp. 757 - 760.
- Chowdhury, A. N., Chen, P. & Robert, L. K. T., 2011. Analysing the structure of public-private partnership projects using network theory. *Construction Management and Economic*, 29(3), pp. 247-260.
- Cova, B. & Salle, B., 2011. *Shaping projects: A case study of unsolicited proposals in public-private partnership*. Glasgow, Industrial Marketing and Purchasing Group.
- Creswell, J. W., 2014. The selection of a research approach. In: *Research Design: qualitative, quantitative and mixed methods approaches*. 4 ed. Los Angeles, Calif: SAGE, pp. 3-23.
- Daniel, ., Vladimir, ., Nkunde, . & Andrea, ., 2018. Trends and challenges in infrastructure investment in developing countries. *International Development Policy; Revue internationale de politique de développement*, 10(1).
- Delmon, J., 2017. *Public-private partnership projects in infrastructure: an essential guide for policymakers*. Cambridge: Cambridge University Press.
- El-Gohary, N. M., Osman, H. & El-Diraby, T. E., 2006. Stakeholder management for public private partnerships. *International journal of project management*, 24(7), pp. 595-604.
- Finance Commission of Sri Lanka, 2018. *Public private partnership approach: theory and practice*. [Online] Available at: <http://fincom.gov.lk/public-private-partnership-approach-theory-and-practice/> [Accessed 22 12 2018].

- Goodenough, D. O., Albert, P. & Ayirebi, D., 2017. A review of stakeholder management performance attributes in construction projects. *International Journal of Project Management*, 8, 35(6), pp. 1037-1051.
- Hodge, G. A. & Greve, C., 2017. On public-private partnership performance: a contemporary review. *Public Works Management & Policy*, 22(1), p. 55 –78.
- Jeffares, S., Sullivan, H. & Bovaird, T., 2016. Beyond the contract - the challenge of evaluating the performance(s) of public-private partnerships. In: G. Hodge & C. Greve, eds. *Rethinking Public-Private Partnerships: Strategies for Turbulent Times*. s.l.:Routledge, pp. 166-187.
- Kim, J.-H., Kim, J., Shin, S. & Lee, S.-y., 2011. *Public-private partnership infrastructure projects: Case studies from the Republic of Korea*, Mandaluyong, Philippine: Asian Development Bank.
- Kurniawan, F., Ogunlana, S. & Motawa, I., 2014. Stakeholders' expectations in utilising financial models for public-private partnership projects. *Built Environment Project and Asset Management*, 4(1), pp. 4-21.
- Lam, K., Wang, D., Lee, P. T. & Tsang, Y., 2007. Modelling risk allocation decision in construction contracts. *International Journal of Project Management*, 25(5), p. 85–493.
- Lawrence, L. M., 2018. *Public-Private Partnerships (P3s): what local government managers need to know*, Orlando: International City/County Management Association (ICMA).
- Li, L. et al., 2018. Enhanced cooperation among stakeholders in PPP mega-infrastructure projects: a China study. *Sustainability*.
- Li, T. H. Y., Ng, T. & Skitmore, M., 2013. Evaluating stakeholder satisfaction during public participation in major infrastructure and construction projects: A fuzzy approach. *Automation in Construction*, Volume 29, pp. 123-135.
- Marques, R. C., 2017. Empirical evidence of unsolicited proposals in PPP arrangements: A comparison of Brazil, Korea and the USA. *Journal of Comparative Policy Analysis*, Volume 19.
- Meng, X., 2012. The effect of relationship management on project performance in construction. *International Journal of Project Management*, Volume 30, pp. 188-198.
- Mishra, S. B. & Alok, S., 2017. *Handbook of research methodology*. s.l.:Education Publishing.
- Mital, K. & Mital, V., 2019. Public private partnership and social infrastructure.
- Mladenovic, G., Vajdi, N., Wundsche, B. & Temeljotov-Salaj, A., 2013. Use of key performance indicators for PPP transport projects to meet stakeholders' performance objectives. *Built Environment Project and Asset Management*, Volume 3, pp. 228-249.
- Nathan Associates, 2017. *Public-private partnerships, a basic introduction for non-specialists*, s.l.: United Kingdom: Economic and Private Sector Professional Evidence and Applied Knowledge Service.
- National Agency for Public Private Partnership, 2018. *Framework development and infrastructure financing to support Public Private Partnerships*, s.l.: Government of Sri Lanka.

- Ogunsanmi, O. E., 2013. Stakeholder's perspective of Key Performance Indicators (KPIs) of Public Private Partnership (PPP) projects. *International Journal of Construction Supply Chain Management*, 3(2), pp. 27-38.
- Oktavianus, A., Mahani, I. & Meifrinaldi, 2018. *A global review of public private partnerships trends and challenges for social infrastructure*. s.l., EDP Sciences.
- Oppong, G. D., Chan, A. P. & Densoh, A., 2017. A review of stakeholder management performance attributes in construction projects. *International Journal of Project Management*, Volume 35, pp. 1037-1051.
- Osei-Kyei, R. & Chan, A. P., 2015. Review of studies on the critical success factors for Public Private Partnership (PPP) projects from 1990 to 2013. *International Journal of Project Management*.
- Osei-Kyei, R. & Chan, A. P., 2016. Implementing public private partnership (PPP) policy for public construction projects in Ghana: critical success factors and policy implications. *International Journal of Construction Management*.
- Pandey, P. & Pandey, M. M., 2015. *Research methodology: tools and techniques*. Romania: Bridge Cente.
- Ponto, J., 2015. Understanding and evaluating survey research. *Journal of the advance practitioner in oncology*.
- PPP Unit, 2019. *Public private partnership*. [Online]
Available at: <http://www.ppp.gov.za/Pages/defaultold.aspx>
[Accessed 14 1 2019].
- Pryke, S. D., 2004. Analysing construction project coalitions: exploring the application of social network analysis. *Construction Management and Economics*, 22(8), pp. 787-797.
- Queiroz, C., 2007. Public-private partnerships in highways in transition economies: Recent experience and future prospects. 1996(1), pp. 34-40.
- Robert, S. & Albert, P., 2016. Implementing public–private partnership (PPP) policy for public construction projects in Ghana: critical success factors and policy implications. *International Journal of Construction Management*.
- Roumboutsos, A. & Pantelias, A., 2014. Allocating revenue risk in transport infrastructure public private partnership projects: how it matters. *Transport Reviews: A Transnational Transdisciplinary Journal*, 35(2), p. 183–203.
- Schepper, S. D., Dooms, M. & Haezendonck, E., 2014. Stakeholder dynamics and responsibilities in Public–Private Partnerships: A mixed experience. *International Journal of Project Management*, 32(7), pp. 1210-1222.
- Tang, L. & Shen, Q., 2013. Factors affecting effectiveness and efficiency of analyzing stakeholders' needs at the briefing stage of public private partnership projects. *International Journal of Project Management*, 31(4), pp. 513-521.
- Tang, L., Shen, Q. & Cheng, E. W., 2009. A review of studies on Public–Private Partnership projects. *International Journal of Project Management*, 7 11.
- The World Bank Group, 2016. *The state of PPPs*, Washington: The World Bank Group.
- The World Bank, 2018. *Procuring infrastructure public-private partnerships*, Washington: The World Bank.

Thomas, N. & Thomas, A., 2017. *Critical analysis of the success factors of public- private partnership projects in Kerala*. Pune, s.n.

Weththasinghe, K., Gajendran, T. & Brewer, G., 2016. *Barriers in proper implementation of Public Private Partnerships(PPP) in Sri Lanka*. Cairns, Australia, s.n.

World Economic Forum, 2018. *Empowering public-private collaboration in infrastructure: national infrastructure acceleration (NIA) approach*, s.l.: World Economic Forum.

Yang, J. et al., 2011. Stakeholder management in construction: An empirical study to address research gaps in previous studies. *International Journal of Project Management*, 29(7), pp. 900-910.

Yang, J. et al., 2009. Exploring critical success factors for stakeholder management in construction projects. *Journal of Civil Engineering and Management*, 15(4), pp. 337-348.

YanMok, K., Shen, G. Q. & Yang, J., 2015. Stakeholder management studies in mega construction projects: A review and future directions. *International Journal of Project Management*, 33(2), pp. 446-457.

Yuan, J., Li, Q., Skibniewski, M. J. & Zheng, L., 2010. Performance objectives selection model in PPP projects based on the perspective of stakeholders. *Journal of Management in Engineering*.

Yun, S., Jung, W., Han, S. H. & Park, H., 2015. Critical organizational success factors for public private partnership projects - A comparison of solicited and unsolicited proposals. *Journal of Civil Engineering and Management*, 21(2), pp. 131-143.

Zou, W., Kumaraswamy, M., Chung, J. & Wong, J., 2014. Identifying the critical success factors for relationship management in PPP projects. *International Journal of Project Management*, 2, 32(2), pp. 265-274.