Topic: **Conceptualizing a Win-Win Scenario in Public-Private Partnerships: Evidence from a Systematic Literature Review.**

Abstract

Purpose: Achieving the win-win goal in public-private partnership (PPP) has gained much research interest in recent times. These studies have addressed the achievement of win-win from various perspectives. An integration of the constructs from these various perspectives improves approach to attaining win-win throughout the entire project delivery. This study, therefore, becomes the first systematic review to analyse PPP studies towards identifying win-win constructs and then integrates findings into a conceptual model.

Design/ Methodology: This study adopted a four-staged systematic review method. This includes concept development, papers retrieval, selection of relevant papers and qualitative analysis. Thematic analysis was used at the qualitative analysis stage for the identification and categorization of constructs and finally, systems thinking was adopted in integrating the findings into a conceptual model.

Findings: The achievement of win-win between government and private investors is of much desire hence a more conscious approach towards it is ideal. A total of 40 constructs were identified and were later categorized into 6 components. Some constructs identified include optimal assessment and fair allocation of project risks, reasonable concessions period, flexible contracting, equal and active participation and coordination of public and private actors and strategic negotiation.

Originality/ Value: This paper provides an improved definition of win-win scenario in PPP infrastructure project delivery. Furthermore, the novel approach of integrating win-win constructs into a systemic conceptual model is very relevant to PPP body of knowledge and practice. The study concludes with plausible research directions to further improve the achievement of win-win in PPP.

Keywords: Public-Private Partnerships, Conceptualization, systems thinking, Win-Win Scenario, systematic review

1.0 Introduction

Public-private partnership (PPP) is a phenomenon that has gradually gained significant recognition and widely used in infrastructure project delivery (Cheung et al.,2009). It facilitates private finance, especially in public infrastructure development, for improved quality, efficiency, and cost-effectiveness (Zheng and Tiong, 2010). PPP is a financial model that is used in constructing or procuring public facilities thus, the government attracts social capital to reduce their financial burden while enterprises earn revenue through private investment (Liao, 2016). Despite its acceptance and mass application, records of failed cases exist due to conflicting opinions and interests between public and private parties (Song et al., 2016).

In public-private partnerships (PPPs), both private and public parties have interests which must be satisfied at the end of the deal (Chen, 2013). The private sector is mainly profit-driven and seen as a merchant while the government authority is socially minded and seek very cost-efficient means of delivering infrastructure (Suchman *et al.,* 2018). A win-win where the interests of both parties is achieved is relevant to the sustenance of the PPPs. It is believed that PPPs are designed to achieve the aforementioned, yet practical realization and confirmation is lacking (McKeon, 2017). An ideal PPP is one in which mutuality is high while stakeholder interests are retained throughout the project (Walwyn and Nkolele, 2018). The collective collaborations between the private and public sectors towards the creation of a win-win contract, curbs the potential of opportunistic behavior and will conscientize the contracting parties of each other's interests (Liu *et al.,* 2016).

In recent times, achieving win-win situation for both parties in PPPs given their distinct prime motives has gained much interest. Chen, (2013) argued that to improve value for money in PPPs, practitioners must work towards win-win. Therefore, successful PPPs necessitates the adoption of public-private win-win dealings where the interests of both sectors are addressed concurrently and adequately throughout the project. Different researchers have described and captured win-win in relation to several constructs in PPP studies, depending on their research focus. In a bid to develop a win-win concession period, Zhang, (2009) referred to win-win as meeting the multiple interests of the public sector and the profit-making interest of the private sector. Similarly, Carbonara *et al.,* (2014) also concluded that win-win is the ability to satisfy the varying interest of the parties involved by ensuring their profit needs and at the same time fairly allocating risks among them. Also, Domingues and Zlatkovic (2015) described win-win in relation to the contractual arrangements where a flexible and renegotiable contract is ideal rather than the incomplete contract theory used in PPP.

Notably, PPP research has captured win-win from different perspectives and project activities. This means that attaining a win-win is desirable however, this cannot be fully realized throughout the implementation life cycle if addressed solely in specific PPP activities and constructs. Therefore, a holistic view of attaining win-win by integrating the various constructs captured in PPP studies is ideal. This will provide a detailed and more auspicious approach to win-win realization throughout the project execution. In view of this, this study becomes the first systematic review of PPP studies which focuses on highlighting win-win constructs (approaches and factors to achieving win-win) captured in PPP studies and integrates them into a conceptual model as a more holistic approach to achieving win-win in PPP implementation. The novelty with this concept will be a major contribution to the PPP body of knowledge and practice. The outputs will provide a solid foundation for the formulation of hypothesis for

further empirical investigation. In summary, this paper (a) identifies and categorizes constructs in attaining win-win in PPP studies (b) holistically defines a win-win scenario in PPPs (c) develops a novel conceptual model for a holistic win-win achievement and finally (d) discusses future research directions.

2.0 Literature Review

2.1 A Case for win-win in PPPs

Studies have brought to light some shortcomings with the implementation of PPP projects which calls for a more conscious move towards achieving win-win or mutual satisfaction. The theoretical win-win logic of PPPs is simple to conceive but achieving that, in reality needs strategic decisions (Rotter *et al.,* 2012). Through the analysis of PPP contracts, Walwyn and Nkolele, (2018) concluded that most PPP projects have been associated with asymmetry contracting. Shrybman and Sinclair (2015) also, argued that the standard PPP contract is private skewed to gain more attractiveness from the private sector investors. Furthermore, evidence assessment from case studies reveals that there is little evidence of mutual gains from the partnership arrangements between parties due to an imbalance of power, and any gains achieved are not shared equitably (Grimshaw *et al.,* 2002). Also, the social, economic, and financial targets of private and public parties in PPP do not coincide hence searching for common ground or win-win is crucial (Leviäkangas *et al.,* 2016). Demirag & Khadaroo, (2008) expressed doubts on the compatibility of public values (which is hard to quantify) and value for money concept in PPP. They stressed that this is due to the contradicting desires of achieving financial value for money, while protecting the traditional values of the public in relation to transparency, equality, openness, governance by rule and democratic accountability (Weihe, 2008). Shi *et al.,* (2016) stated PPPs, in reality, depict a leader-follower relationship such that responsibilities, resources and power levels that exist among public and private parties are mostly unequal. Furthermore, Li *et al.,* (2020) through case study investigations gathered that conflicting interests coupled with information asymmetry exists between the private sector and the government which fuels opportunistic behaviors mostly from the private sector. Thus, the cross perception between private and public sectors are gradually changing and are realizing the need to strive for mutual benefits by building it based on strategic partnership deals and activities (Kobylinska, 2017). Therefore, the level of mutual satisfaction and success can be better improved if stakeholders become more cognizant of initiating and implementing win-win deals.

2.2 Win-win Reflections in PPP Studies

2.2.1 Defining win-win in PPPs

The realization of win-win or mutual satisfaction as learned earlier is desired by private and public sectors in PPP. To achieve win-win, certain activities during project implementation should be strategically handled. Past PPP studies have revealed certain activities or constructs that foster the realization of win-win. Carbonara and Pellegrino, (2018a) stated that the fair sharing of risk between the government and the concessionaire creates a win-win position in PPPs. Berawi (2019), added that win-win is achieved through the fair sharing of risks, resources, responsibilities, and rewards among the government authorities and private party. Furthermore, the combination of the strengths of both parties, fairly allocating risk to who can best manage them and incorporate industrial best practices while exploring new technologies

and innovations depicts a win-win scenario in PPPs (Chen, 2013). He further argued that in striving for win-win in PPPs, practices and agreements within PPP contracts should work towards making the private party gain reasonable profit and also allow the public sector to utilize private resources to provide needed infrastructure and cost-effective services.

2.2.2 Case study and practical illustrations towards achieving win-win in PPPs

Hadi and Erzaij, (2019) in their study addressed win-win achievement from the contract period perspective. They estimated a suitable completion time which enables a timely completion of project construction and the operation period adequate to ensure concessionaire gets reasonable returns which do not compromise on the interest of the public sector. On a PPP transport project, Pellegrino *et al.,* (2019) addressed win-win achievement through the development of an interest rate cap which is the rate above which the private sector obtains repayment from the government. This balances the interests of both private and public parties. Furthermore, Carbonara and Pellegrino, (2018b) developed a concession price which minimizes the difference between the net profits gained by the contracting parties as a means of attaining win-win situation. Gao and Zhao, (2020) also approached win-win from a strategic contract negotiation process. Based on an energy power construction project, they applied strategic games (from game theory) to develop a strategic contract negotiation process to obtain a Nash equilibrium. In the same vein, Domingues and Zlatkovic (2015) captured win-win achievement through the creation of a contract renegotiation mechanism which creates an opportunity to adapt to reality during project implementation. They also establish strategies to contract renegotiation in a bid to gain win-win situation. Wu *et al.,* (2018) established that effective risk management is a means of achieving win-win in that parties effectively identify and assess risk factors to enable a fair and equitable allocation between the government and the private sector. Lastly, Feng *et al.,* (2019) applied game theory on a silk road project where win-win was addressed on fair and reciprocal cooperation between contracting parties.

3.0 Methodology

This study adopts a systematic literature review (SLR) to address the objectives of the study as adopted by most authors in PPP studies (Osei-Kyei and Chan, 2015; *Bao et al.,* 2018). It involves the critical overview of high-quality studies towards meeting an objective to provide sound judgement of the subject area (Jain and Sharma, 2016). Unlike conventional reviewing of literature, the SLR provides a more principled and unbiased means to analyze literature on a subject (Mallett *et al.,* 2012). The methods adopted in this study is sectioned into four stages namely, concept and review objective development, documents retrieval, selection of relevant papers and finally, qualitative analysis, conclusions, and recommendation. Figure 1 presents a graphical summary of the methodology.

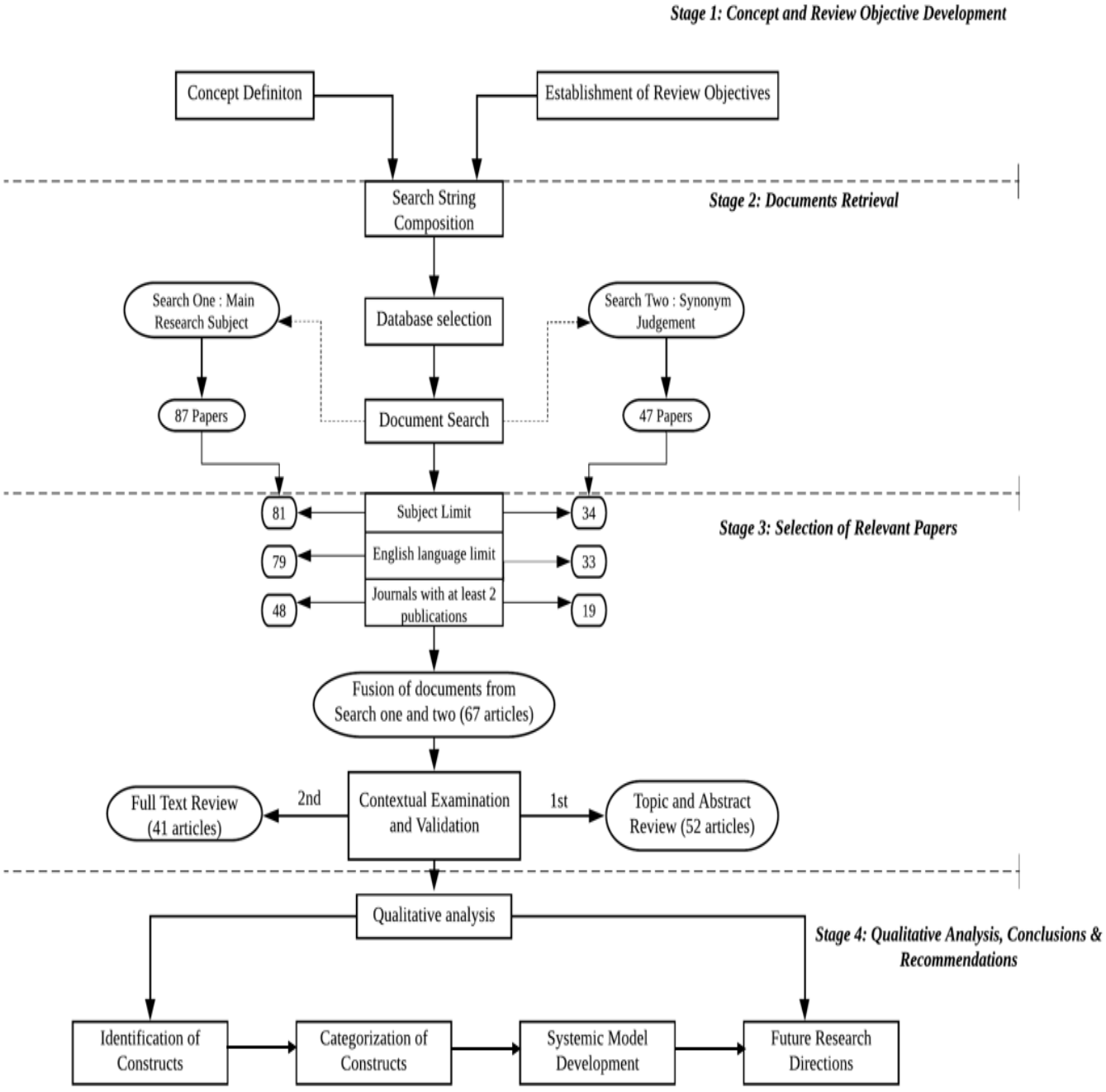

Figure 1: Systematic Review Methodology

3.1 Concept and review objective development

This stage is relevant in every review study as it creates the establishment of a clear logic and path for the study. A desk study review was conducted to establish review gaps and the contextual meaning of win-win being referred to in this paper. Notably, and to the best of our knowledge, no review study in PPP has focused on win-win and hence a good ground for exploration. Also, a leading from Chen (2013) recommended that a more exhaustive approach to win-win is relevant to improve value for money and successful PPP implementation, further

buttressing the objective of this paper. Additionally, to ensure a clearer view for the win-win (research subject of this paper) being referred to in this study, authors also through the desk study established win-win as a set of agreements and practices that establishes mutual satisfaction to parties in PPPs. In this paper win-win is being associated with mutuality between the private and public sectors. However, a much precise and exhaustive definition will be developed as part of the review objectives later in the study.

3.2 Documents Retrieval

At this stage, the initial steps to obtaining the data set or papers for the review is done. This involves two separate activities which are the selection of the database or search engine and the establishment of search string which will be used in obtaining the papers. In the selection of the database for this study, reference to other PPP review studies was made, and Scopus was the most used in such studies (Osei-Kyei and Chan, 2015; Bao *et al.,* 2018). Scopus has a wider coverage in comparison to other databases and also the high indexing nature of Scopus enhances the possible retrieval of recent papers (Zhao et al.,2019). Two separate searches were done in this study following a similar process adopted by (Wang *et al.,* 2014; Alkaissy *et al.,* 2020) with the logic of increasing access to papers for the review. The keywords used in the first search of this study were mainly focused on the research subject i.e. win-win. However, the issue of exhaustiveness is uncertain therefore a synonym judgment process used by Wang *et al.,* (2014) in their review study was adopted for the second search. In screening the articles, authors noticed that some articles used other phrases synonymously with win-win and this informed the establishment of the phrases used for the second search. Consequently, the search string used for the first search was “win-win” and " public private partnership" OR "Public-Private Partnership" OR "PPP" OR "Private Finance Initiative" OR "PFI" OR "Build Operate Transfer" OR "BOT" while the second search used "mutual gain" OR "mutual benefit" OR "mutual interest" OR " mutual satisfaction" in place of the “win-win”. The search was done with no year limits and 134 documents were retrieved as of 5th June 2020.

3.3 Selection of Relevant Papers

Sampling of the essential papers for the qualitative analysis was done at this stage. Successive screening and filtration were performed to refine the data using inclusion and exclusion criteria peculiar to SLR. Non-English documents were removed, and documents limited to peer-reviewed journals. The irrelevant subject areas were also removed from the data. The journal sources were selected based on the criteria that it had at least two publications as similarly used by Osei-Kyei and Chan, (2015). Publications in Chau’s (1997) ranking of construction journals were included irrespective of the number of papers due to its wide acceptance in construction-related reviews. Further sampling was done through a two-step contextual examination and validation process. This was to draw out PPP studies that captured win-win or to achieve mutual satisfaction between the public and private sectors. Hence the focus of preferred articles is to be about win-win prevalence between just the government and the concessionaire (private party) and not any other stakeholder. The first examination was the topic and abstract review and later the full paper review which resulted in a sample size of 41 relevant papers for the study. This sample is adequate since similar studies like Yu *et al.,* (2018) and Osei-Kyei and Chan, (2015) analyzed 37 and 27 papers, respectively.

3.4 Qualitative Analysis

The review adopted a thematic analysis approach to identify and categorize the win-win constructs captured in literature. This enables interpretation of latent content data where specific findings are paramount and the occurrence of the specific themes are usually not the main goal (Neuendorf, 2019).

3.4.1 Identification of win-win constructs

In most of the 41 review articles, win-win constructs were not outlined in tables or charts (i.e. manifest content). Hence, identification of the constructs followed a stringent systematic analysis process to effectively identify the constructs from the latent content nature of the articles. This paper adopted a six-phased thematic analysis process by (Braun *et al.,* 2014) namely: (a) Content familiarization, (b) generation of initial codes, (c) themes search, (d) defining and naming themes, (e) re-examination of themes and (f) consistency assessment of themes or constructs identified. The first three processes were initially performed on an individual basis by authors. This enabled familiarization with the articles being reviewed and the initial identification of themes. Subsequently, the six-phase process was jointly performed by authors to identify the win-win constructs captured in PPP literature. This was very necessary as it controlled the level of individual subjectivity in constructs identification, especially when dealing with some level of latent content. After the successful execution of the recursive process, a total of 40 win-win constructs was identified. These are presented in Table 1.

3.4.2 Categorization of win-win Constructs

In a bid to define a win-win scenario in PPP which is part of the objectives of this paper, categorization of the identified constructs was essential. This enables the development of a brief and precise definition of win-win in PPPs. Furthermore, it is aimed to establish win-win components that would form the various parts of the systemic conceptual model (i.e. used as components of the model) developed in this paper. This paper adopted the constant comparison method which is based on the similarities and interrelations of constructs (Kolb, 2012). Here the component names are gotten from the subject matter the identified win-win constructs refer to. The constant comparison method was achieved following this process: identification of interrelations, uniformity assessment, and finalization through focus group. The focus group involved 4 other academics who are well vested in PPP. Chan *et al.,* (2020) applied this method and efficiently categorized drivers for the adoption of international construction joint ventures. Six categories were developed from the 40 win-win constructs identified and are presented in Table 2.

3.4.3 Systemic conceptual model development

Ramm (2011) highlighted that PPPs usually involve long-term intervention at multiple levels and therefore need a systemic approach and ideally, this should be considered when they are being planned. According to Skyttner (2005), a set interacting components that form a unified whole to perform some functions or achieve a goal can be referred to as a system. *Guevara et al.,* (2020) adopted systems thinking in a PPP literature review and developed a systems map from the interacting constructs identified. Notably, the constructs identified earlier collectively enlighten the achievement of win-win goal in PPPs. Therefore, the achievement of win-win from a more holistic perspective could be better realized if handled as a system. This study

adopted the systems approach principles by Jackson *et al.,* (2010) in the development of the model. This includes the (a) *identification of components*: this involves the identification of components which was earlier established through the review analysis (b) *definition of components:* this captured the functional definition of the components i.e. capturing the win-win construct they represent (c) *establish interaction among components*: the establishment of the linkages between individual components in the model, this also highlights interdependencies and moderating components in the model (d) *definition of component environment*; this established other factors that come to play in this case considered as the control variables and (e) *synthesis of the model*; integration of the components into the model which depicts the systemic conceptual model of achieving a win-win scenario in PPPs. (f) *model assessment;* this also adopted the use of the focus group discussion to review and finalize the model. The model is presented in Figure 4.

4.0 Results and Discussion

The figure 1 below presents the publication trend and distribution of the 41 reviewed articles over the years. There exists a general notion of PPPs being the type of partnership that fosters the achievement of win-win among stakeholders unlike other forms of infrastructure procurement. Thus, PPPs are preferred due to its win-win tendency and build up. However, recent studies have begun to raise the question whether win-win or mutual satisfaction is practically gained in the implementation of PPPs (Rotter *et al.,* 2012; Walwyn and Nkolele, 2018; Li *et al.,* 2020). They captured issues of imbalance of power, opportunistic behaviors, and asymmetry of contracts as experiences being faced in PPP practice. It is clear to note from the publication trend that there is an increasing interest in publications in recent years. Thus, researchers are becoming more and more interested in developing strategies to ensure the achievement of mutual satisfaction or win-win in PPP practice. Also, about seventy percent of the papers reviewed involved practical or case study methods. This further affirms the assertion by McKeon (2017) that win-win achievement remains a problem in PPP practice. This also buttresses the relevance of this review which aims to throw more light on adopting a more conscious approach towards achieving win-win or mutual satisfaction in PPPs.

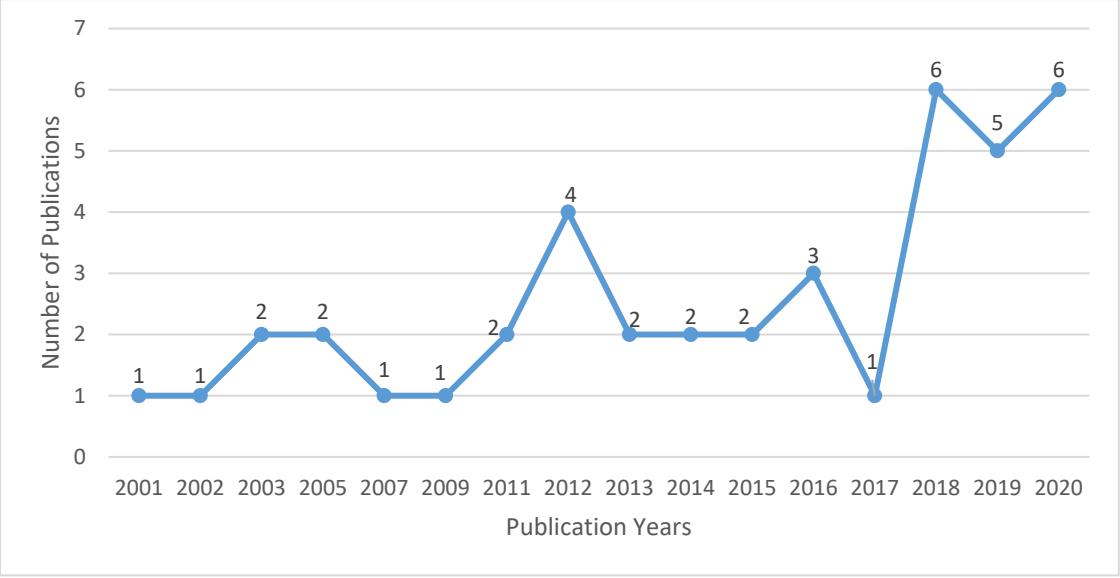

Figure 2. Annual publication distribution of win-win studies in PPP

4.1 Identification of Win-Win Constructs

This paper thematically analyzed forty-one articles and as a result, 40 win-win constructs were identified and presented in Table 1. However, most authors devised different means of ensuring that the constructs presented in table 1 is realized. For example, Hadi and Erzaij, (2019) proposed a completion or contract duration period to adequately allow construction and operation of the project such that, concessionaire makes reasonable profit while the government obtains possession of the infrastructure early enough. Hence their win-win goal was to develop a reasonable concession contract duration. Most studies applied different measures to achieve the identified constructs as requisite to a win-win situation dependent on the type of PPP project (i.e. transport, energy, etc), country economic laws, and PPP model. In reference to the sum of occurrences, the top five constructs include fair/equitable risk-sharing or allocation, reasonable concession price structure/ fair profit-making, reasonable concession or operation period estimation, balanced revenue and incentive mechanism, and flexible contract agreements.

Table 1: win-win constructs in PPP studies

Code	Constructs	References	Sum
C1	Fair/equitable risk sharing or allocation	2,21,22,30,32,33,35,36,37,38	10
C2	Reasonable Concession price structure/ fair profit making	28,30,33,34, 36,41,35,39	8
C3	Reasonable Concession or contract period estimation	2, 24,29,35,40,41,9	7
C4	Balanced Revenue and incentive mechanism	19,16,20, 22	4
C5	Flexible contract agreements	24,31,39	3
C6	Equal distribution of project gains and benefits	4,13,28	3
C7	Strategic financial planning and package	15,4,38	3
C8	Collaborative management and assessments	8,7,37	3
C9	Effective communication and dialogue methods	6,7,31	3
C10	Technical innovation development	32, 38,41	3
C11	Equitable Revenue guarantee structure and sharing	3,5,25	3
C12	Optimum risk assessment	17,21,32	3
C13	Efficient risk treatment	32,34,41	3
C14	Efficient risk identification and exposure	32,36,41	3
C15	Optimum financial computation	14,37	2
C16	Existence of sound financial regulation and investment environment	41,38	2
C17	Active participation of both parties	1,2	2
C18	Coordination mechanism	12,31	2
C19	Adequate skills and knowledge capacity development	15,31	2
C20	Commitment enhancement	6,27	2
C21	Nash Equilibrium negotiation/dealings	10,12	2
C22	Convergence of interests in negotiation	11,18	2
C23	Cooperation/ relational agreements	25,27	2
C24	Mechanism for renegotiation of arrangements	6,41	2
C25	Mechanism for risk reappraisal	41, 40	2
C26	Continuous performance improvement	41,39	2
C27	Continuous innovation	1,35	2
C28	Strategic supervision and monitoring	1,41	2
C29	Performance optimization	31 ,36	2
C30	Flexible dealings among stakeholders	1,6	2

C31	Project economic viability	38	1
C32	Balance of power between parties	13	1
C33	Cooperative partnership	18	1
C34	Simultaneous maximization of interests	23	1
C35	Equal involvement of parties	26	1
C36	Development of integrative dynamic capabilities	1	1
C37	Strategic conflict resolution and negotiation	26	1
C38	Balanced risks and responsibilities	27	1
C39	Effective risk management	40	1
C40	Performance evaluation	40	1

1= Am et al., 2014, **2**= Carbonara et al., 2014, **3**= Carbonara and Pellegrino, 2018a, **4**= Carbonara and Pellegrino,2018b, **5**= Chen et al. 2018, **6**=Domingues And Zlatkovic,2015, **7**= Feng et al, 2019, **8**= Guo 2017, **9**= Hadi and Erzaij, 2019, **10**=Glumac et al., 2015, **11**= Fogelberg and Thorpenberg, **12**= Gao and Zhao 2020, **13**= Grimshaw et al., 2002, **14**= Leviakangas et al., 2013, **15**= Leviäkangas et al., 2016, **16**= Li et al.,2020, **17**= Li and Wang, 2018, **18**= Liou et al., 2011, **19**= Liu et al., 2016, **20**= Liu et al.,2020, **21**= Patel et al., 2019, **22**= Pellegrino et al., 2019, **23**= Repolho et al. 2016, **24**= Sang et al., 2019, **25**= Setiawan et al.,2018, **26**= Shakibaei and Alpkokin,2020, **27**= Storbjörk et al.,2019, **28**= Tavakoli, and Nourzad, 2020, **29**= Ng et al.,2007, **30**= Vassallo et al., 2012, **31**= Wakeford and Valentine, 2001), **32**= Wu et al., 2018, **33**= Xu et al.,2012a, **34**= Xu et al., 2012b, **35**=Ye and Tiong (2003a), **36** = Ye and Tiong (2003b), **37**= Zhang, 2005a, **38**= Zhang, 2005b, **39**= Zhang, 2009, **40**=Zhang 2011, **41**= Zhang and Chen,2013.

4.2 Categorization of The Win-Win Constructs

Categorization improved simplification and easy reference to the constructs, thus enveloping them into a single and much broader component. Table 2 presents the results of the categorization into components. The mean value analysis (MVA) used for ranking the components. The mean values were estimated by summing up the frequencies of the constructs divided by the number constructs grouped into that category. This method was adopted by Chan *et al.,* (2020) for categorization in a review study. The identified constructs were grouped into components that depict a similar phenomenon in the various articles reviewed. Therefore, the achievement of win-win or mutual satisfaction between public and private parties in PPPs can be realized if specific focus is placed on these components also presented in Figure 3.

Table 2: Categorization of win-win constructs

No.	Components	Code	Constructs	Freq.	Mean	Rank
1	***Financial Planning and Modelling***	***FPM***		***33***	***3.67***	***1st***
1.1		FPM1	Reasonable Concession or operation period estimation	7		
1.2		FPM2	Equitable Revenue guarantee structure and sharing	3		
1.3		FPM3	Equal distribution of project gains and benefits	3		
1.4		FPM4	Optimum financial computation	2		
1.5		FPM5	Strategic financial planning and package	3		

1.6		FPM6	Balanced Revenue and incentive mechanism	4		
1.7		FPM7	Reasonable Concession price structure/ fair profit-making	8		
1.8		FPM8	Existence of sound financial regulation and investment environment	2		
1.9		FPM9	Project economic viability	1		
2	***Risk Assessment and Allocation***	***RAA***		***23***	***3.29***	***2nd***
2.1		RAA1	Fair/equitable risk-sharing or allocation	10		
2.2		RAA2	Optimum risk assessment	3		
2.3		RAA3	Balanced risks and responsibilities	1		
2.4		RAA4	Efficient risk treatment	3		
2.5		RAA5	Efficient risk identification and exposure	3		
2.6		RAA6	Effective risk management	1		
2.7		RAA7	Mechanism for risk reappraisal	2		
3	***Capabilities and Competency Development***	***CCD***		***11***	***2.20***	***3rd***
3.1		CCD1	Adequate skills and knowledge capacity development	2		
3.2		CCD2	Development of integrative dynamic capabilities	1		
3.3		CCD3	Effective communication and dialogue methods	3		
3.4		CCD4	Technical innovation development	3		
3.5		CCD5	Commitment enhancement	2		
4	***Contract Design and Negotiation***	***CDN***			***2.00***	***4th***
4.1		CDN1	Flexible dealings among stakeholders	2		
4.2		CDN2	Nash Equilibrium negotiation or dealings	2		
4.3		CDN3	Convergence of interests in negotiation	2		
4.4		CDN4	Flexible contract agreements	3		
4.5		CDN5	Cooperation/ relational agreements	2		
4.6		CDN6	Mechanism for renegotiation of arrangements	2		
4.7		CDN7	Strategic conflict resolution and negotiation	1		
5	***Project Performance Management***	***PPM***		***9***	***1.80***	***5th***

5.1		PPM1	Continuous performance improvement	2		
5.2		PPM2	Continuous innovation	2		
5.3		PPM3	Strategic supervision and monitoring	2		
5.5		PPM4	Performance optimization	2		
5.5		PPM5	Performance evaluation	1		
6	***Private and Public Involvement/ Coordination***	***PPI***		***11***	***1.57***	***6th***
6.1		PPI1	Active participation of both parties	2		
6.2		PPI2	Collaborative management and assessments	3		
6.3		PPI3	coordination mechanism	2		
6.4		PPI4	Balance of power between parties	1		
6.5		PPI5	Cooperative partnership	1		
6.6		PPI6	Simultaneous maximization of interests	1		
6.7		PPI7	Equal involvement of parties	1		

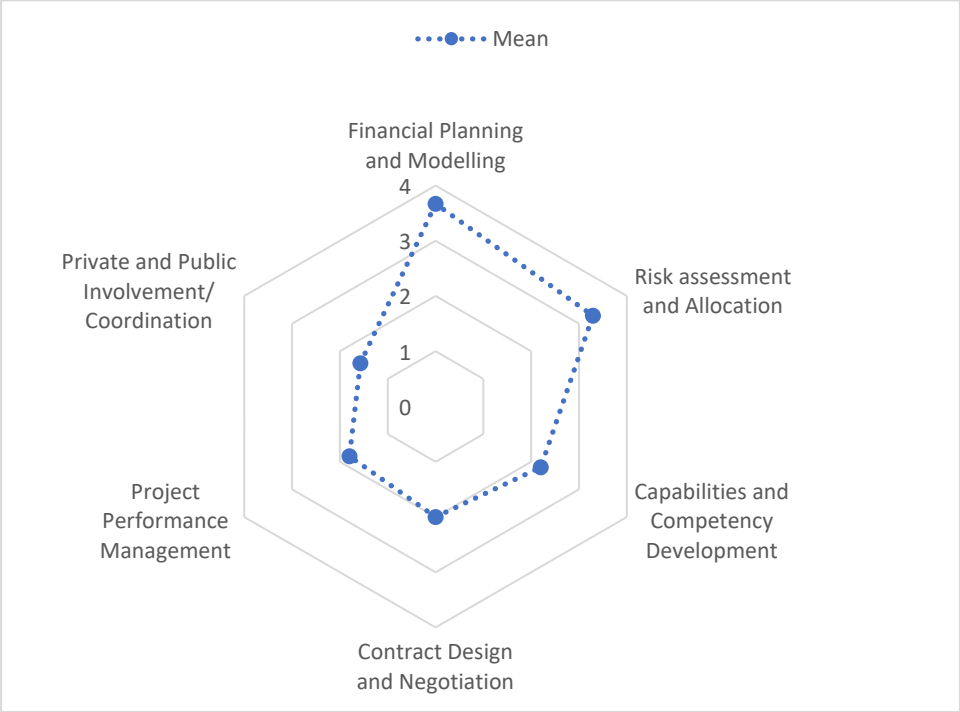

Figure 3. Components of win-win in PPP

4.2.1 Financial Planning and Modelling

Financial Planning and Modelling came as the highly ranked component from the results of the MVA. This means that most authors sought to achieve win-win with focus on financial modelling and planning. This, therefore, makes it an important component in the strategic planning of a holistic win-win approach. The definition of a sound financial plan in public-

private partnership projects is critical (Carbonara *et al.,* 2014). Many PPP projects fail because of the loss of revenues owed to unrealistic concession prices (Yan, 2017). It is relevant to concentrate efforts on developing accurate estimates to be used as basis for contract preparation to attain mutual interest of both private and public parties (Vassallo *et al.,* 2012). The planning of the financial considerations in PPP arrangements is a good spot for parties to strike win-win deals. This is due to the interest of the private sector in making profit while the public sector looks out for the best cost-efficient way to provide public infrastructure. This is affirmed by Åm and Heiberg, (2014) who argued that PPP practitioners are well poised to plan a win-win partnership when the incentives are aligned equitably as much as possible and which operates with predictable flexibility. Accordingly, the parties of the concession contract should put effort into better estimation of the value of this incentive (Marzouk and Ali, 2018). For example, Carbonara and Pellegrino (2018b) asserts that, the contract should have a financial plan that minimizes the difference between the net profits (NPV) gained by the contractual parties to comply with win-win condition and developed a model to that effect. This shows that win-win can be achieved through the development of financial plans and models with equitable distribution of returns.

4.2.2 Risk Assessment and Allocation

The MVA results showed that a number of studies captured optimal assessment and fair allocation of project risks among parties as a means of gaining mutual satisfaction or win-win. The possibility that a given activity or action will result in a desirable or undesirable outcome or the dearth of predictability about an activity, its outcome or consequences in decision or planning situations can be referred to as risk (Kumar *et al.,* 2016). Risk remains a constant and visceral feature of any PPP, which is mostly shared with little or no room for them to be entirely transferred or avoided (Walwyn and Nkolele, 2018). The achievement of win-win between public and private sectors is also attributed to the way risk is managed. Risk allocation is a very important aspect of risk management as it comes as part of the initial steps to managing them. However, assessment of these risk proceeds allocation therefore becomes equally important. Patel *et al.,* (2019) asserted that it is important for the public and private sectors to establish an effective risk assessor model for PPP schemes to reach a win-win condition. The rational assessment of risk in PPPs is the core of any risk-response and risk-allocation mechanism (Wibowo *et al.,* 2012). Shrybman and Sinclair, (2015) stated that there is a one-sided approach to dealing with risk under public private partnership schemes which creates an imbalance. Therefore, an optimum risk assessment and fair allocation enable the parties to attain win-win (Liu *et al.,* 2020).

4.2.3 Capabilities and Competency Development

PPP implementation lies in the hands of the public and private sectors involved and it is therefore dependent on their level of skills and capabilities. The efficacy of the strategic measures employed towards reaching win-win is dependent or rests on the capabilities of the stakeholders that make up private and public parties in a PPP scheme (Am and Heiberg, 2014). The public and private parties must demonstrate some level of competency for win-win to be achieved. Some capabilities are required of both parties while others are highly required of either the public or the private sector. Leviäkangas *et al.,* (2016) stated that both must have the knowledge, skills, and experience in PPP implementation to foster the achievement of the win-win principle. Furthermore, Shryman and Sinclair (2015) suggested that the government

authority must be capable of creating a good environment that will promote the success of the PPP scheme. The proficiencies required of the public sector includes well-built legal and regulatory frameworks, investment climate, institutional capacity, operational maturity in PPP, political stability, and technological capacity. Ling *et al.,* (2015) pointed out that mutual trust and understanding, a good attitude toward teamwork, the sharing of project information, a dispute resolution mechanism, joint problem-solving, and real pain-share/gain-share are requisites for achieving mutual satisfaction in PPP implementation. Additionally, capabilities required of the parties to reach win-win goal include sustainability consciousness, technological capacity, trust and transparency, good managerial skills, financial stability, culture intelligence, operational maturity, dexterity and quality relationship (Min and Jun, 2014; Sai *et al.,* 2015; Kobylinska, 2017).

4.2.4 Contract Design and Negotiation

The nature of contract design and negotiation activities or methods adopted by stakeholders is relevant in the achievement of win-win in PPP implementation. In relation to this component, the reviewed papers highly captured flexibility as the core attribute of the contract that is likely to promote win-win (Zhang, 2009; Sang *et al.,* 2019). Garg and Garg (2017) also argued that there is a need to rethink PPPs by consciously moving away from rigid contracts. Long contract periods in PPPs increase the level of uncertainties in implementation and unforeseen incidences are likely to occur hence the most effective armrest of achieving win-win is flexibility (Domingues and Zlatkovic, 2015). The nature of the contracts should be flexible enough to allow for tailoring a win-win situation for both parties and achieving a successful partnership (Marzouk and Ali, 2018). If the partnership is driven towards attaining win-win, there must be an opportunity to make some readjustments to the working contracts due to situational dynamics which are usually inevitable in PPPs (Wakeford and Valentine, 2001).

Another key construct in this component is how these contracts are negotiated such that win-win deals can be achieved. Establishing fair and efficient negotiation process that allows both parties to reach a common ground is critical. To achieve this, Glumac *et al.,* (2015) and Gao and Zhao (2020) adopted the Game theory concept in developing a bargaining strategy set to achieve Nash equilibrium which is a win-win for both private and public parties. Shakibaei and Alpkokin (2020) highlighted on best strategy to attaining win-win during conflict resolution. They are of the view that one cannot compromise on the method and the outcome of the negotiation process which is adopted in conflict resolution. If not strategically executed, it could compromise attaining win-win or mutual satisfaction as well. The subject of a mechanism for renegotiation of contract and other dealings was the focus of the study by Zhang and Chen, (2013) and Domingues and Zlatkovic, (2015). They highlighted that, renegotiation clauses can be an essential means for PPPs in contractual management, allowing them to better cope with uncertainty and adapt to reality as a way of keeping the win-win goal intact.

4.2.5 Project Performance Management

Performance management in relation to planning, construction, operation, and other activities involved in PPP implementation were captured. In order to reach the win-win goal, the essence of performance evaluation in PPP activities is critical. Zhang, (2005b) stated that the continuous effort towards performance enhancement enables the realization of the win-win in

PPPs. Also, performance evaluation is critical as it enables the stakeholders to know how win-win measures being put are faring. For example, Zhang, (2011) developed a concession period with respect to the win-win principle and also stressed the criticality of evaluating the operational performance of the project. Additionally, keen supervision and monitoring of win-win measures in play on that project is vital (Zhang and Chen, 2013). Am and Heiberg, (2014) instigated that the public and private parties must put in place measures to effectively monitor the performance of the project to ensure that it is still in sync with the win-win constructs or strategies. Additionally, an approach that continuously re-evaluates and re-assess project risks, financial models, and success criteria at the different stages of the PPP implementation is ideal for attaining win-win (Kamphof and Melissen, 2018). The active involvement of both public and private actors is required in the appraisal for fairness and accountability checks, and reliability of results (Leviäkangas *et al.,* 2016).

4.2.6 Private and Public Involvement/ Coordination

The private and the public stakeholders are the target influencers of achieving win-win situation in PPPs (Leviäkangas *et al.,* 2016). The public sector involves the national or government authority procuring the infrastructure whereas the private sector is the private firm(s) (special purpose vehicle) who execute the project through financing, construction, operation, maintenance, etc. Thus, they play a core role in the realization of win-win in PPPs. The active participation of both the private and public actors of the PPP scheme is critical to the achievement of mutual satisfaction (Am and Heiberg, 2014). Both contracting parties must develop formalized protocols for working together with accessible channels for communication (Suchman et al., 2018). Win-win achievement requires that there is balance of power between the parties, which is key in the effective collective management of the project (Carbonara et al., 2014) i.e. one party must not override that of the other in relation to decisions and activities which involves both parties and affects them simultaneously as well (Grimshaw *et al.,* 2002). The implementation of PPPs where there exists a coordinating mechanism established on cooperative partnership ensures that both parties are duly and equally involved in decision making. Such is poised for reaching the win-win goal (Gao and Zhao, 2020).

4.3 Conceptual Model Development

As earlier captured in the paper, the win-win constructs which were initially identified and later categorized into components are the constituents of this conceptual model. Systems thinking enables a logical integration of these interacting components towards the attainment of win-win by the end of the project life. Dewulf *et al.,* (2012) stated that PPPs for infrastructure delivery consists of interacting components like a system. Following the systems principles captured earlier in the paper the model was developed. Figure 4 presents the integration of the components identified from the systematic review.

The review focus is to draw out the win-win constructs in PPP studies. However, researchers have realized that aside the concentration of the studies on the main win-win subject, the success criteria for that particular project were considered in the win-win computations, strategies, or measures taken. This informed the inclusion of project-based success criteria component in the model. Project uniqueness and quality, timely completion, and actual cost of the projects were considered in the articles reviewed (Am and Heiberg, 2014; Carbonara *et al.,*

2014: Hadi and Erzaij, 2019). Also, the model captures control mechanism as another component included in the system. This is to enable the separation of renegotiation which was initially placed under the contract and negotiation component at the categorization stage. This is because authors who highlighted renegotiation as a win-win construct considered it in the later part of the project implementation specifically after construction or operation has commenced. Renegotiation as used in those studies was to provide some form of control mechanism to reinstate or maintain win-win goal amid project uncertainties. After the appraisal of win-win measures taken under the performance management component, the control mechanism aids in maintaining win-win alignment.

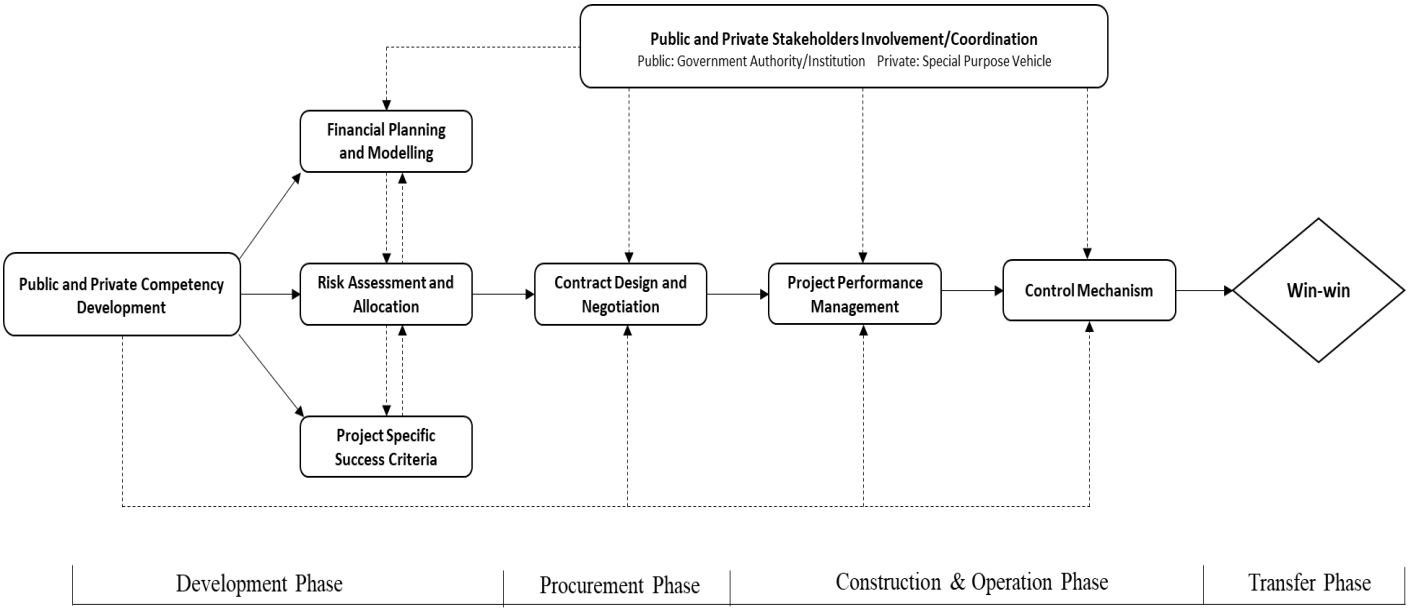

Figure 4. Conceptual model of win-win in PPP Project Implementation

The components in the model act like a network and these components interact with each other. From the systems approach the interactions of the model is key to showing tlhe feasibility in integrating them into one system to achieve the purpose of win-win in the implementation of PPP schemes (Jackson *et al.,* 2010). The arrows used in figure 4 reflects a linkage between those components. The dashed arrows indicate an influence on the other component which is how they interact. For example, the private and public competencies influence financial planning and modelling as well as risk assessment and allocation. While the thick arrows show both influence and a process flow from one component to the other. For instance, contract and negotiation component precedes performance management and at the same time, the win-win constructs within the contract and negotiation component have an effect on the constructs within the performance management component as it determines what is being measured in terms of performance.

The recognition of the system environment is important in systems thinking. The implementation of PPPs occurs in stages typically the inception or development stage, the procurement/tendering stage, the construction stage, operation stage, and transfer stage (Osei-Kyei and Chan, 2018). Therefore, the win-win constructs can occur at different stages of the PPP. For example, flexible contracting can occur at the procurement and tendering stage and not at the construction or operation. Again, optimum risk assessment and allocation of risks form part of the development stage and so on. Therefore, the win-win constructs identified in the study are bound by the various phases in PPP implementation.

This model interprets that, a conscious approach towards the win-win goal requires a fair and optimum allocation and assessment of risks, preparation of financial plan and models (concession pricing and periods) that equitably favours both parties with the consideration of crucial project-specific success objectives. These activities are performed by the project actors (private and public sectors) and therefore the efficiency of these activities rely on the degree of competency displayed. The optimum competencies exhibited in performing these activities will warrant a win-win inclined contract from the onset (development phase) since financial plans and risks and project success objectives form part of the contact. Furthermore, the model depicts the need for contract flexibility. This makes it easy to adapt to reality through the construction, operation to the transfer phase of the PPP life cycle. Also, a strategic negotiation process of contract terms between parties is best for win-win. More so, performance evaluation and control mechanisms are required to keep the win-win measures in balance and stable till the end of life of the project. The above requires the equal and active involvement of both private and public sectors, this will enhance a fair play and representation in decision making.

4.4 Defining a win-win Scenario in PPPs

The paper discussed definitions by different authors earlier in the paper and evidently, these definitions captured equitable distribution of project returns and fair risk allocation among the private and public parties coupled with improvement of the technical knowledge of stakeholders. The varying perspectives of authors in relation to win-win have caused some different descriptions or definitions of win-win situation. This complication makes it difficult to outrightly define win-win in PPPs as a rule of thumb. However, through the systematic review, this study is able to add to these definitions and descriptions. This paper therefore describes win-win in PPP as a situation where the private and public parties are equally and actively involved in the development of optimum and fair risk assessment and allocation, financial plans and models that equitably favours the concessionaire and government with the careful consideration of project-specific success criteria, amid capable private and public actors, flexible contracting, strategic negotiation, performance evaluation and control mechanisms to sustain win-win measures throughout the PPP project life cycle.

4.5 Implications and Future Research Direction

This paper took a different direction from the usual PPP review studies to analyze win-win approaches captured in studies, leading to the development of a conceptual model. This model although was reviewed through focus group could further be empirically examined. The establishment of the interrelationship between the components can be studied since the

developed model is hypothetical in nature. This is affirmed by Dewulf et al., (2012) who captured that infrastructure project PPPs often take place within a network of interacting factors and concepts, yet little attention is placed on the assessment of these networks or systems. Also, the review established the use of flexible contracts as a catalyst to achieving the win-win goal. This creates an opportunity to investigate the level of flexibility as well as the reasonable aspects of the contract where these flexibility measures can be taken such that the success criteria of the project are not compromised. Therefore, strategies for flexible contracting in PPP infrastructure projects can be developed through research and development. Furthermore, case-based studies on negotiation strategies can be explored. Some authors adopted game theory approach to decipher the best negotiation strategy involving the public and private stakeholders during decision making. This model proposed a systemic approach and therefore creates an avenue to integrate system dynamics with bargaining game strategies to establish suitable negotiation strategies towards achieving the win-win goal. The systematic review yielded the identification and later categorization of win-win constructs into components. These components can however be further investigated and improved. For example, the proposed model describes that public and private competencies could improve or impair the realization of the win-win constructs. Therefore, a detailed study to establish government competencies and concessionaire competencies that will enable the achievement of win-win given the above findings can be explored. Hypothetically, they serve as moderators to the other interacting components and could also be empirically investigated. The separate components occur at different stages of the PPP implementation and is captured in this model as the system environment. There could be further analysis to determine how these stages affect the win-win strategies being implemented based on data from practical projects. Also, further studies can be done to improve the control measures or strategies being adopted under the control mechanism. This is to ensure maintenance of win-win balance and adapting to reality during the implementation of the project. The implications of the developed model create plausible prospects for research and development for a more conscious and holistic approach to win-win in PPPs.

5.0 Conclusions and Recommendations

The desire for win-win in partnerships informed the emergence of PPPs as a way of ensuring win-win, unlike the traditional infrastructure project delivery which was in play. However, the current wave of research studies has begun to investigate how to ensure that both government authority and private investor obtain their interests. This study sought to identify the win-win constructs from the various research studies towards integrating them into a conceptual model. This study successfully identified win-win constructs, categorised these constructs into components, improved upon the definition of win-win situation in PPPs from the review results and finally through systems thinking, this paper proposed a conceptual model that integrates the various components identified from the qualitative analysis. The paper identified 40 constructs some of which include equal distribution of project gains and benefits, reasonable concession price structure/ fair profit-making, flexible contract agreements, fair/equitable risk-sharing or allocation, reasonable concession or contract period estimation amongst others. These were then further categorised into six broader components. Mean value analysis was used to rank the components from top to the least ranked which are financial planning and modelling, risk assessment and allocation, capabilities and competency development, contract

design and negotiation, project performance management, private and public involvement/ coordination. The paper further improved upon the descriptions of a win-win scenario by other authors. This paper describes win-win in PPP infrastructure delivery as a situation where the private and public parties are equally and actively involved in the development of optimum and fair risk assessment and allocation, financial plans and models that equitably favours the concessionaire and government with the careful consideration of project-specific success criteria, amid capable private and public actors, flexible contracting, strategic negotiation, performance evaluation and control mechanisms to sustain win-win measures throughout the PPP project life cycle. Lastly, the study integrated the components into a conceptual model to generate a more holistic view of win-win in PPPs. The paper also discussed implications and further research direction that can be investigated. There exists a strong desire to achieve mutual satisfaction or win-win between the government authority and the private investor in infrastructure delivery despite their varying prime motives. Therefore, a more conscious collaborative effort of these two parties given the findings of this review can work towards this goal from inception through to the end of the project. This will foster the strategic alignment of interest between the public and private partners as a prerequisite for developing a long-term effective PPP project.

5.1 Contributions and Limitations of the Study

This study successfully highlighted the main aspects of PPP practice where stakeholders are much keen on the achievement of win-win or mutual satisfaction. Thus, when these activities are compromised it could lead to opportunistic behaviours and unpleasant relationships between stakeholders which does not promote mutual satisfaction. The findings from this study are crucial and informative in the strategic planning of PPPs such that both parties can collectively achieve their interests. The study proposes a system of interacting factors that informs PPP practitioners that there exist relationships between these components therefore they are made aware of how to manipulate the system such that win-win is achieved. Theoretically, this model introduces a different, more practical and holistic perspective of win-win achievement within PPP with plausible future directions to be explored through research. Also, the review findings informed a more holistic description of win-win scenario in PPPs and has added to the already existing descriptions and definitions captured in previous studies. The limitation of this study lies with the criteria used in sampling the articles which were used for the review. The dataset used for the study was obtained from the Scopus search engine and may be limited in coverage. This comes as an opportunity for similar study to be carried using data from more libraries or search engines and also consider conference papers, books, and other reviews since this study was limited to journal articles.

Declaration of Contradictory interest

The authors declare no conflict of interest.

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