buildings

MDPI

Review

Critical Success Factors of Water and Power Public–Private Partnerships in Developing Countries: A Systematic Review

Khaled Aljaber *, M. Sohail and Kirti Ruikar

School of Architecture, Building and Civil Engineering, Loughborough University, Loughborough LE11 3TU, UK; m.sohail@lboro.ac.uk (M.S.); k.d.ruikar@lboro.ac.uk (K.R.)
* Correspondence: k.aljaber@lboro.ac.uk

Abstract: Public–private partnerships (PPP) have evolved as a choice of infrastructure procurement for numerous developing countries, particularly in the water and power sectors, thereby capturing the interest of researchers. A rich body of literature exists in the field of PPPs, as well as their critical success factors (CSF). Despite the valuable insights garnered from individual studies, a research gap exists in conducting a meta-synthesis of the findings from multiple developing countries and investigating the broader elements and themes of power and water PPP CSF research. This systematic review employed the PRISMA protocol and identified 30 records. We explored the regions, sectors, yearly output, adopted research methods, key authors, and themes of the corpus reviewed. The review recognised four emerging trends in the records, which are identifying, ranking, exploring the interrelationship, or utilising CSFs. The review identified the top 30 frequent CSFs in the corpus, as well as their ranking by importance across multiple settings. The review concludes by addressing geographic and methodological limitations and proposing directions for future research.

Keywords: public–private partnership; PPP; systematic review; literature review; critical success factor; infrastructure; power; water; developing countries

check for updates

Citation: Aljaber, K.; Sohail, M.; Ruikar, K. Critical Success Factors of Water and Power Public–Private Partnerships in Developing Countries: A Systematic Review. *Buildings* **2024**, *14*, 1603. https://doi.org/10.3390/buildings14061603

Academic Editor: Ahmed Senouci

Received: 12 March 2024
Revised: 26 April 2024
Accepted: 24 May 2024
Published: 1 June 2024

1. Introduction

Governments, especially in developing countries, lack the financial resources necessary to maintain existing and build new infrastructure facilities [1]. Additionally, there are issues of lack of transparency and low efficiency in the management of infrastructure projects by governments [2]. These factors give rise to poor or limited infrastructure development and warrant a need for alternative solutions other than traditional public spending based on taxation or natural resources. Hence, developing countries are increasingly shifting towards utilising private capital to fund infrastructure projects, with yearly private sector commitment reaching USD 91.7 billion across 263 projects in 2022 [3].

Public–private partnerships (PPP) are defined as

> "Sustained collaborative effort between the public sector and the private sector to achieve a common objective while both players pursue their own individual interests". [4]

> "Long-term contracts between the public and the private sectors in which all or a substantial part of the design, construction, operation, and financing are by the private sector" [5] (p. 3).

> "A mechanism for government to procure and implement public infrastructure and/or services using the resources and expertise of the private sector. Where governments are facing ageing or lack of infrastructure and require more efficient services, a partnership with the private sector can help foster new solutions and bring finance". [6]

> "A process whereby private management assumes an operational role in a public project via a long-term "concession" or lease-type contract with a public authority". [7]

Overall, the definitions emphasise the long-term, sustained contractual nature of PPPs, highlighting that a significant portion or entirety of a project's lifecycle—from design and construction to operation and financing—is undertaken by the private sector. The World Bank's definition focuses on PPPs as a solution primarily for countries grappling with infrastructure deficits that might inadvertently overshadow the broader utility and versatility of PPP models. While PPPs are indeed valuable for addressing infrastructure gaps, they are not exclusively confined to countries with ageing or lacking infrastructure. Many developed nations with robust infrastructure and ample capacity also engage in PPPs to enhance efficiency, innovate service delivery, leverage private sector expertise, and manage fiscal constraints effectively. The definition provided by Levy, while accurately capturing the operational aspect of PPPs through long-term contracts, falls short in encapsulating the comprehensive involvement of the private sector, which extends beyond mere management to encompass critical roles in financing, designing, constructing, and potential ownership stakes in the project. Yescombe and Farquharson's definition stands out as one of the best due to its comprehensive depiction of PPPs, effectively delineating the key parties involved, the extended contractual duration, and the broad spectrum of responsibilities entrusted to the private sector. By emphasising long-term contracts and the extensive involvement of the private sector across design, construction, operation, and financing aspects, this definition adeptly encapsulates the essence of PPPs concisely and inclusively. Recognising the merits of Yescombe and Farquharson's definition, this research article adopts it as the foundation for its analysis.

Different PPP sectors, such as power, water, health, transportation, social infrastructure, and security, reflect unique patterns and are better investigated individually; hence, this review adopted a sector-specific approach. The power–water nexus (P&W) is imperative to the development of a nation. Statistics reflect that P&W projects accumulated 65% of PPPs from 1995 to 2015 [8]. This nexus is fit to be analysed collectively as (a) multiple PPP projects are integrated or interdependent P&W plants; (b) P&W PPP projects have close execution mechanisms; and (c) P&W projects are both capacity-based PPPs; one can argue that transportation PPPs can be capacity based but power and water projects are far more similar in terms of the generation and distribution of the commodity and service.

Review Roadmap

This systematic review begins by establishing the concept of critical success factor, tracing its evolution and dispersion into PPP literature. Moving forward, the review details the methodology employed, including the research questions addressed and the PRISMA protocol utilised for filtering records. The exploration then extends to an in-depth examination of various dimensions within the corpus of literature, including geographical regions, industry sectors, annual publication output, research methodologies adopted, influential authors, and thematic trends. Notably, the review identifies and analyses four emerging trends within the literature: the identification, ranking, exploration of interrelationships, and the utilisation of CSFs. A pivotal aspect of the review is the identification and ranking of the top 30 most frequent CSFs, as well as their ranking by importance across multiple settings. This analytical depth enhances our understanding of the critical factors driving success in PPPs. The review concludes by revisiting the core contributions of the article and critically assessing the limitations inherent in the reviewed literature. Furthermore, the review provides a roadmap for future research, outlining potential avenues for addressing existing gaps and advancing the discourse on PPP CSFs in the power and water sectors.

2. Evolution of Critical Success Factors

The earliest notion of quantifying and deriving factors from success was in the field of management information systems by McKinsey and Co.'s consultants in 1961 as "suc-

cess factors" [9]. The concept later resurfaced as "critical success factors" in a paper by Rockart [10], who defined it as "things that must be done if a company is to be successful". Freund [11] then introduced characteristics to segregate it from other similar concepts in the field by stating that CSFs must be (a) crucial to achieving an objective(s), (b) assessable, (c) limited in number, and (d) applicable to peer entities. CSFs then dispersed to many fields such as IT [12–14] and project management [15–17]. In project management, CSF is defined as "elements in a project that are critical to the project achieving its mission or goal" [18]. The concept of CSF was adopted by leading project management bodies such as PMI and PRINCE2, which incorporated the concept into their curriculums [18,19].

Critical Success Factors in Public–Private Partnerships

With regards to PPP, the concept first sparked the attention of PPP researchers in 2005 [20,21]. The topic then gained traction and became a viable tool for investigating PPPs [22–25], becoming the backbone to multiple PPP assessment papers [26–29]. Researchers have published valuable reviews in the field of PPP, among which multiple reviews discussed PPP CSF including concession period CSFs [30] and transportation PPP CSFs [31,32], but there was no documented attempt to conduct a review on critical success factors of water and power PPPs in developing countries.

3. Review Methods

This paper aims to present a review of critical success factors in developing countries with a focus on infrastructure projects in the water and power sectors by addressing the following research questions:

MRQ: What are the most prevalent critical success factors of the implementation of power and water (P&W) PPPs in developing countries?

SRQ1: What research methods dominate P&W PPP CSF literature in developing countries? What are their geographic domains and who are the principal contributors?

SRQ2: What are the main themes and topics in P&W PPP CSF literature in developing countries?

SRQ3: What are the gaps and limitations of P&W PPP CSF literature in developing countries? And what are the recommendations for future research?

This literature review adopted a systematic literature review (SLR) approach to present a holistic review of the topic. Systematic literature reviews (a) employ a clear and transparent approach to retrieving and reviewing the literature; (b) adhere to a well-defined sequence of stages; and (c) are written in an updatable, replicable structure [33]. Although SLR can be rigorous and gradual, it excels in producing a holistic review of the body of literature as well as analysing primary research, methodologies, geography, themes, and multiple characteristics of the papers, aiding in articulating gaps in the literature, mythologies used, and geographic saturation [34–36].

3.1. Retrieving and Selecting Papers

Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) is a search protocol for conducting systematic reviews [37]. In Figure 1, PRISMA was utilised to retrieve literature. By following PRISMA, the reviewers can minimise selection bias when retrieving papers by following explicit identification, screening, and eligibility guidelines [38]. SCOPUS was utilised to search and retrieve articles due to being trusted and considered the standard search engine by PPP and PM researchers [39–41]. SCOPUS was also utilised in multiple PPP systematic reviews [34,42,43]. This Boolean phrase was used to conduct the search: (TITLE-ABS-KEY ("Public Private Partnership*" OR "Public-Private Partnership*" OR PPP) AND TITLE-ABS-KEY (CSF OR "Critical Success Factors").

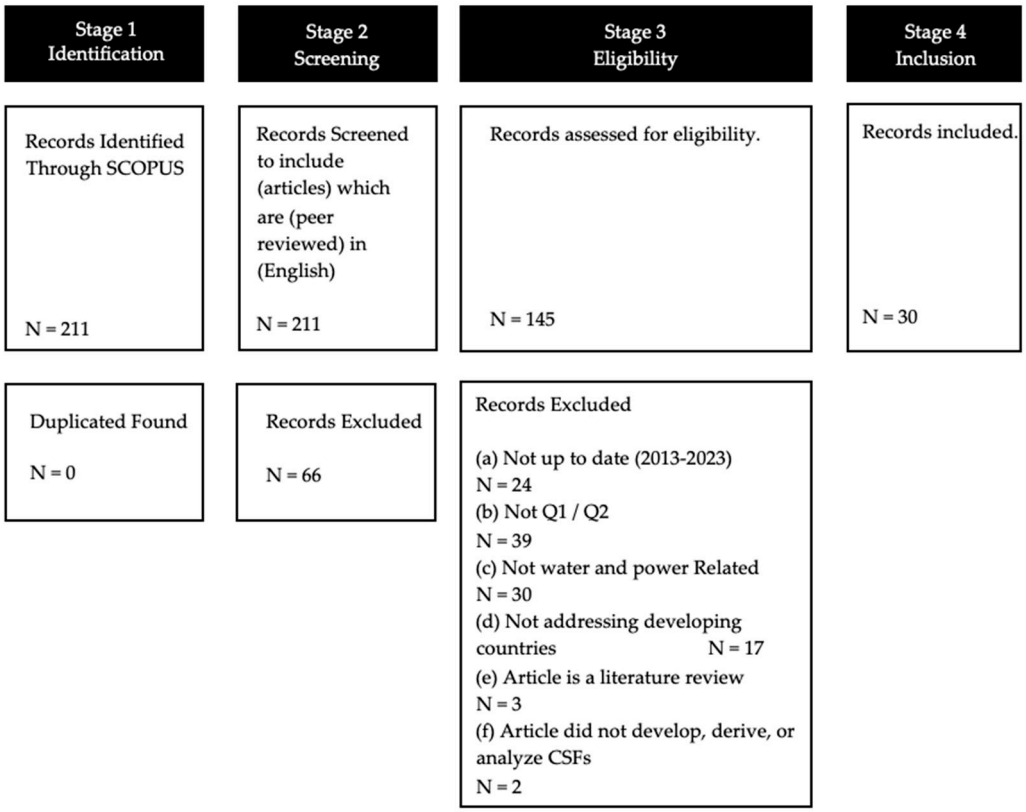

Figure 1. PRISMA review method.

Paper Filtering Stages

Stage 1: SCOPUS search (1) identified 207 papers; no duplicates were found.
Stage 2: SCOPUS toggle switches were used to (2) screen and filter "articles" that were "peer-reviewed" in "English" which reduced the papers to 144.
Stage 3: The papers were assessed for (3) eligibility by the reviewers with the aid of Rayyan AI, an AI tool deemed helpful by multiple researchers [44,45]. Exclusion criteria were developed through studying multiple PPP reviews and are as follows:

- The article is not up to date "2013–2022" [34,42,43];
- Article is not Q1 or Q2 [42];
- The article did not address the sectors of interest "Power and Water" [32,46];
- The article did not address developing countries;
- The article is a literature review;
- The article did not develop critical success factors or contribute to CSF PPP research [42].

Stage 4: A total of 30 articles were (4) included in the systematic review. The number of articles deemed adequate as multiple PPP systematic reviews investigated a close number of articles [34,46–48].

4. Literature Analysis

In this section, the reviewers analyse and discuss the literature through the lens of geography, sectors, research methods, and author contributions. Descriptive analysis aids in unveiling gaps beyond the ones existing in the body of literature (methodological, geographic, et cetera) through precise quantitative profiling, which helps define notable contributors in the field of interest.

4.1. Geography, Sectors, and Yearly Outputs

Countries were sorted by the World Bank countries and economies report [49]. Table 1. presents geographic, sectorial, and chronological profiles of reviewed articles. Ghana leads PPP CSF research, with 27% of the papers investigated. Researchers investigating Ghana tackle a wide array of topics, including public sector perception, country readiness, and PPP policy, as well as produced success prediction models, policy implementation strategies, and best practice frameworks. China comes second (20%), with a significant output in quantitative research, particularly in statistical tools to identify, rank, and measure the interrelationship of PPP CSFs using fuzzy logic, structural equations modelling, and indexation of success criteria. Third comes India, with three papers (10%) covering CSF identification, unsolicited CSF projects, and a case study on grid privatisation. A total of 90% of papers were country-specific, while 10% were not, out of which, two papers were directed towards developing countries in general while one paper focused on Latin America and the Caribbean. The review included power-and-water-specific literature along with general PPP CSF literature discussing power and water PPPs. As presented in Table 1, the majority of papers were non-sector specific. The review showed scarcity in power-focused PPP CSF research, with one power-focused paper.

Table 1. Geography, sector, and yearly output of the papers reviewed.

Country	Papers	Percentage	Sector	Papers
Ghana [1]	8	27%	General	21
China	6	20%	Water focused	7
India	3	10%	Power focused [2]	1
South Africa	2	7%		
Nigeria	2	7%	Year	Papers
Indonesia	2	7%	2013	1
Bosnia	1	3%	2014	1
Albania	1	3%	2015	3
Malaysia	1	3%	2016	5
Vietnam	1	3%	2017	3
			2018	4
Regional Papers			2019	4
Developing Countries	2	7%	2020	1
L. America and the Caribbean	1	3%	2021	5
			2022	1
Total	30	100%	2023	2

[1] Ghana and China dominated the reviewed CSF PPP papers. [2] The review reflected scarcity in power-focused PPP CSF research [50].

4.2. Adopted Research Methods of Reviewed Literature

In analysing the methodologies used in the literature, several key observations emerge from Table 2. Firstly, a predominant trend is the utilisation of quantitative research methodologies, aligning with the broader landscape of PPP literature reviews [34,42,43]. This emphasis on quantitative analysis underscores the growing significance of empirical data and statistical analysis in understanding CSFs within PPPs. Notably, China's pioneering role in employing quantitative research methods was observed, signifying regional leadership in adopting empirical approaches to investigate CSFs in PPPs.

Table 2. Descriptive statistics of research methods.

Research Method		Collection Method		Analysis Method	
Quantitative [1]	67%	Questionnaire survey	67%	Factor analysis/principal component analysis	31%
				Fuzzy logic	11%
				Structural equation modelling	17%
				Mean score analysis	19%
Mixed methods	17%	Interview	14%	Semi-structured	8%
				Delphi method	6%
Qualitative	17%	Case study	14%	SWOT/PESTLE analysis	3%
				Content analysis	11%
		Literature review	6%	Document analysis	6%

[1] Quantitative research dominated PPP CSF research.

4.3. Key Authors

To identify the key contributors in the field of critical success factors of public–private partnerships within developing countries, this systematic review utilised an Equation (1) formulated by Howard et al. [51] to calculate the contribution scores of various authors. The equation assumes a weighted distribution of contributions, where the first author is deemed to contribute the most, followed by subsequent authors with decreasing levels of contribution.

$$\frac{1.5^{n\ 1}}{\sum_{i\ 1}^{n} 1.5^{n\ 1}} \quad (1)$$

Howard's contribution score was deemed helpful by one PPP review [43]. However, it is crucial to acknowledge the limitations of the formula. First, the equation assumes a non-linear decrease in contribution with authorship order, which may not accurately reflect the actual distribution of contributions in all cases. Some authors might contribute equally or more substantially, regardless of their position in the author list. Secondly, the equation's parameters, such as the base value (1.5), might not be universally applicable and could introduce biases depending on the specific context or field of study.

Table 3 presents the authors who have made significant contributions based on their total number of papers, their calculated contribution scores, and their respective countries of affiliation. It is imperative to note that only authors with multiple contributions were included in this analysis. Robert Osei-Kyei emerges as the most prolific contributor with a total of six papers in this domain, reflecting a significant and consistent engagement with the topic, primarily focusing on policy, experts' opinions, and best practices. His contribution score of 6 underscores the depth and breadth of his influence in the papers produced, representing Australia. Albert P.C. Chan follows with a total of nine papers; however, his contribution score is calculated at 3.26. Albert played specific roles in the papers, contributing to distinct aspects or assuming specialised responsibilities; however, he was not the primary author or lead contributor in these works. Consequently, while his involvement in various capacities adds value to the papers, his contribution score is comparatively lower due to the weighted nature of authorship in which the lead author's contribution holds greater weight in the calculation. Authors such as Ernest Ameyaw (Hong Kong), Khotso Dithebe (South Africa), Lihong Liu and Chuan Chen (China), Clinton Aigbavboa, and Wellington Thwala (South Africa) have also made contributions to the field, albeit with a smaller number of papers and subsequently lower contribution scores. This analysis provides insight into the landscape of contributors within the P&W critical success factors of PPPs in developing countries, highlighting the varied levels of influence and engagement among the key authors identified, along with their diverse geographic

affiliations. This analysis provides insight into the landscape of contributors within the critical success factors of PPPs in developing countries, highlighting the varied levels of influence and engagement among the key authors identified, along with their diverse geographic affiliations.

Table 3. Contribution score of key authors.

Author	Total Output	Country	Institution	Total Citations	Contribution Score
Robert Osei-Kyei	6	Australia [1]	Western Sydney University	249	6
Albert P.C. Chan	9	Hong Kong [2]	Hong Kong Polytechnic University	326	3.26
Ernest Ameyaw	3	Hong Kong	Hong Kong Polytechnic University	171	1.19
Khotso Dithebe	2	South Africa	University of Johannesburg	13	0.8
Lihong Liu	2	China	Sichuan University	37	0.6
Chuan Chen	2	China	Sichuan University	3	0.58
Clinton Aigbavboa	2	South Africa	University of Johannesburg	13	0.54
Igor Martek	2	Australia	Deakin University	3	0.38
Wellington Thwala	2	South Africa	University of Johannesburg	13	0.35

[1] Authors affiliated with Australia stand out with the highest cumulative contribution score. [2] Authors from Hong Kong account for the highest paper count.

5. Discussion of Research Themes

In this review of PPP CSF literature, a corpus of 30 seminal papers was reviewed to distil insights into the critical success factors that underpin the efficacy of these collaborations. Our synthesis reveals a spectrum of approaches employed by scholars in unravelling PPP success. While a significant subset focuses on the identification of CSFs, others venture into ranking their importance through surveys, providing practitioners with strategic insights. Moreover, a subset of the literature explores the interrelationships between CSFs using advanced statistical techniques like factor analysis and structural equation modelling, unravelling the complex web of interactions within PPP ecosystems. Additionally, some scholars translate CSFs into frameworks and best practice models, not only enriching theoretical discourse but also offering actionable guidance for stakeholders involved in the planning, implementation, and evaluation of public–private partnerships.

5.1. Unveiling Success: Evaluating CSF Identification and Ranking Methods in PPP Literature

5.1.1. Identification of CSFs

A subset of the reviewed papers primarily focused on the identification of CSFs, seeking to delineate the key determinants that significantly influence the outcomes of PPPs. These studies lay the groundwork for understanding the fundamental components crucial to the success of collaborative endeavours between the public and private sectors.

A study by Osei-Kyei and Chan [25] explored the CSFs for the construction stage of PPPs in Ghana by analysing two successful projects. Five CSFs were identified, with implications for policy and practice. The research provided helpful data for policymakers and practitioners, but limited focus on two cases may affect broader applicability. Comparative analysis contributed valuable strategies for international private developers, aiding PPP practices. Another research with a cross-country perspective examined the CSFs in PPP projects in the context of Ghana as a developing country and Hong Kong as a developed country. The study highlighted the shared priorities, such as legal frameworks, while uncovering divergent phases of socio-political and organisational aspects to enrich the global PPP implementation framework [52]. A third study by Osei-Kyei et al. [53] compared a public sector view on PPP practices in Ghana and Hong Kong through semi-structured interviews. The study offered strategies useful for international private developers interested in PPP practices in Ghana and Hong Kong. Multiple CSFs were extracted from the interviews including capacity building and training, project viability, proper planning and good feasibility studies, international study tours, and organising courses and seminars.

Also, interviewees mentioned sensitisation programs as a factor for managing external stakeholders. The studies were limited in terms of interviewing experts from one developed country, Hong Kong, from which only 27 were surveyed and two experts were interviewed. The number and profile of experts may not fairly represent international experts, potentially impacting generalisability.

The articles [25,52–54] primarily focused on the identification of CSFs within the context of PPPs. However, it is noteworthy that these papers are characterised by an absence of ranking and in-depth analysis of the relative importance and impact of these identified CSFs. While these studies effectively enumerate the factors that are deemed critical in PPP projects, they fall short of providing a comprehensive assessment of their hierarchical significance, thus limiting the depth of insight into the relative weightage and interplay of these factors in the success of PPP initiatives.

Table 4 showcases the top 30 frequent CSFs identified in the papers reviewed. Papers were physically examined, and CSFs were extracted from each paper; table marking indicates that the CSFs were developed or used for analysis in the labelled article.

Numbered lists can be added as follows:

1. *Favourable legal framework* is the most frequent CSF in the papers reviewed. The frequency is evidenced by multiple sources. Findings highlight that effective implementation of PPP projects depends on having strong legal and regulatory structures in place [54,55]. Additionally, the European Bank for Reconstruction and Development Assessment supports this notion by indicating that PPP projects' success is reliant on a strong legal framework [56].
2. *Appropriate risk allocation* comes second in terms of frequency in the corpus; the criticality of this factor was demonstrated in Osei-Kyei and Chan's project success index, which weighed it at 0.353, emphasising its significant impact on project outcome [40]. Research suggests that challenges encountered in PPP projects stem from the diverse array of risks and uncertainties inherent in long-term PPP contracts [57]. Hence, the consortium should divest the exposure to the stakeholder best fit to manage each risk [58]. Moreover, knowledge management, PPP experience, and addressing project complexity may aid in mitigating uncertainty [59].
3. *Private sector capacity* comes third in this table. Sources indicate that financial [41,60], technical [61], and workforce capacity [62] are all crucial for successful PPPs. In developing nations, there is a significant dependence on foreign companies to overtake PPP projects. This reliance stems from the substantial capital and technical capability needed for PPP. Furthermore, local investors often lack the capacity to effectively compete with their foreign counterparts [52].

5.1.2. Ranking and Grouping of CSFs

Beyond identification, some researchers investigated the relative importance of identified CSFs. Through comprehensive surveys and expert opinions, these studies sought to elucidate the hierarchical significance of each factor, providing practitioners and policymakers with nuanced insights into where strategic emphasis may be most warranted.

Via international PPP experts' perceptions, one study identified success criteria such as risk management, time adherence, and long-term partnerships [63]. This research helped in advancing the understanding of the dimensions of PPP success by providing practitioners with essential benchmarks for evaluation. The findings emphasised seven very critical success criteria, offering insights for practitioners. The research employed surveys, but its response rate of 14% introduced the possibility of non-response bias, potentially affecting the representation of stakeholders' perceptions.

Table 4. Identified critical success factors of power and water public–private partnerships.

Criritcal Success Factors	Frequency	[23]	[24]	[25]	[39]	[40]	[41]	[50]	[52]	[53]	[54]	[55]	[57]	[58]	[59]	[60]	[61]	[63]	[64]	[65]	[66]	[67]	[68]	[69]	[70]	[71]	[72]	[73]	[74]	[75]
Favourable legal framework	21	x			x	x	x		x		x	x	x	x	x	x	x		x	x		x	x	x		x	x	x		x
Appropriate risk allocation	18	x			x	x			x		x		x	x	x	x		x		x		x	x	x		x	x		x	x
Private sector's Capability	16	x		x		x		x	x		x		x	x	x	x				x	x	x	x	x			x			
Public opinion	14	x		x		x	x		x			x			x	x		x				x	x			x		x		x
Stable macro-economic environment	14		x			x			x		x		x	x	x	x		x				x	x	x				x		x
Political support	14	x	x		x	x	x		x		x		x		x					x		x		x				x		x
Competitive bidding	14	x				x			x		x	x	x			x			x	x		x		x				x	x	x
Government administrative capabilities	13	x			x	x	x		x		x		x		x			x		x			x	x				x		
Profitability	13	x		x					x		x		x	x	x			x					x	x		x	x	x		
Government commitment	13		x			x			x		x	x		x	x	x				x		x		x			x	x		
Feasibility study and implementation plan	13					x	x		x	x	x		x	x		x				x		x		x			x		x	
Transparency	13				x	x			x		x	x	x			x	x			x		x		x			x			x
Clear cooperated departments	12	x			x		x					x	x	x	x	x			x	x		x	x							
Cost, time and quality management	12							x					x	x	x	x		x	x				x			x		x	x	x
Sound economic policy	11					x			x		x		x	x	x	x						x	x	x			x			
Standardization PPP procedure	10					x			x		x		x	x	x	x	x			x									x	
Clear project scope and documentation	10					x			x			x	x	x	x	x					x	x				x				
Available financial and capital market	9	x				x			x		x			x	x	x								x			x			
good governance	9				x							x	x	x										x	x	x			x	x
capacity building and training	9	x				x	x	x		x										x			x					x	x	
Technological innovation	9					x		x	x		x		x					x							x	x				x
The level of public recognition	8					x			x	x		x		x	x	x										x				
Open communication	8					x			x	x		x		x									x		x	x				
Public satisfaction	7						x							x	x			x		x						x		x		
Renegotiation and arbitration	7						x					x				x		x		x									x	x
Cost-benefit assessment	7				x						x			x		x						x		x					x	
The feasibility of operation mode	6					x										x		x					x				x		x	
Multi-benefit objectives	6								x				x	x								x		x						x
enviromental impact	6					x	x	x	x									x								x				
Government's financial support	6					x			x											x				x			x	x		

"x" indicates the occurance of the critical success factor and the relevant paper.

A study on Albania [41] extracted CSFs from the literature and utilised questionnaire surveys to rank factors that drive successful PPP implementation. Among these, project selection, financial capacity, trust and accountability, negotiation, and predictable revenue stream had the most weight. One interesting study [61] worked on transition economies; this study explored critical success factors for establishing sustainable PPPs. Like the previous studies, this research also used factor analysis. The study identified four CSFs, namely, a central PPP unit, a compatible legal/regulatory framework, national PPP policies, and standardisation/transparency. The paper contributed to PPP knowledge, but its applicability might be limited to transition economies. Another paper examined the unresolved issues in PPP by providing an in-depth analysis of motivations and success factors for such projects [64]. It is noteworthy to mention that the researcher used avoidable negative-worded questions in the survey; such questions may induce negativity bias which can compromise reliability scores and validation measures [76]. Another research by Wibowo and Alfen [65] explored government-led CSFs in PPP infrastructure development within the Indonesian context. They identified 30 CSFs through literature and assessed their importance, highlighting the underperformance of these factors in Indonesia. The authors employed weight gap analysis and the Holland and Copenhaver procedure to assess the importance and performance of these factors. The top five factors were "sound legal basis, irrevocable contract except through due process, sensible and manageable risk-sharing arrangement, clearly defined mechanisms of PPP needs, and strong political support". The paper provided valuable insights into Indonesia's PPP activities, which are relatively underrepresented in the literature. The research offered a practical and replicable approach for governments to assess and improve PPP-specific determinant factors, enhancing their practical relevance.

A study by Dithebe et al. [39] explored the critical success factors (CSFs) in water infrastructure projects delivered under PPPs in South Africa. In line with this research, another paper by Bao et al. [66] explored water PPPs in China. Both studies combined mean value analysis and confirmatory factor analysis to analyse CSFs, identifying the top factors influencing success and grouping the CFS into Component axes. Dithebe could benefit from Bao's approach of tackling a specific phase (transfer phase) and categorising CSFs into appropriate groups to generate more fruitful findings. The most important factors mentioned by Dithebe et al. [39] were "(1) Establish models for realistic projections on guaranteed revenue; (2) Thorough planning for project viability; (3) Show high level of transparency; (4) Legal framework stipulating policy continuity; (5) Use of new, improved, transparent, cost-effective and competitive procurement processes". Bao et al.'s [66] findings were "(1) contract system, (2) infrastructure, (3) transferred assets, (4) transfer acceptance criteria, and (5) overhaul information".

Multiple studies explored PPP projects through the lens of stakeholder engagement and perception. Babatunde et al. [24] and Sanni [58] both took Nigeria as a case in pursuit of unravelling CSFs through analysing the stakeholder viewpoints and CSFs of PPP projects in Nigeria using a multifaceted approach, including literature reviews, questionnaire surveys, and statistical analyses to shed light on the pivotal role of stakeholders' perceptions and factors determining success. Babatunde et al. used factor analysis to consolidate the factors derived from the literature into six main factors which are "reliable concession arrangement with due diligence; serious commitment with adequate technical strength; favourable economic environment; government support with enabling legislation; a bankable project with adequate stakeholders' involvement; and strong political will with committed private partners". Babatunde and other researchers aimed to identify CSF through multiple mediums such as literature review and case studies. However, most have neglected the attempt to validate the CSFs derived before testing for importance. Sanni attempted to fill the gap by validating the CSFs extracted from the literature through expert interviews. The researcher investigated the implementation of PPP projects in Nigeria, identifying critical factors influencing their success and developing a public and private sectors' success factors model for PPP projects using a rotated factor matrix. While both papers address

public sector and private sector stakeholders, the survey profiles of Babatunde et al. and Sanni are composed of 17.9% public sector and 82.1% private sector participants, and 73.9% public sector and 26.1% private sector participants, respectively. The parity in weight may question the validity of the results in terms of fair representation of stakeholders [24,58]. The papers are centred around the examination of PPP projects in specific countries, specifically focusing on success criteria, implementation practices, challenges, and their interactions with governmental roles. However, the narrow focus of the studies on specific countries and regions may restrict the broader relevance of its findings to PPP projects in other countries. Chou and Pramudawardhani [67] addressed this issue by highlighting the cross-country comparisons of key drivers, CSFs, and risk allocation preferences in PPP projects. This study differs from the above studies because it explores PPPs in multiple countries including Taiwan, Singapore, China, the United Kingdom, and Indonesia. This research contributed to the PPP literature by highlighting similarities and differences among these countries.

Overall, the existing literature showed a common thread of identifying and ranking CSFs in their exploration of critical success factors and challenges in PPP projects within developing countries. The strengths of these papers include their contributions to the understanding of PPPs and their potential to inform policy and practice. However, limitations such as sampling, geographical focus, and selection of experts should be considered when interpreting and applying their findings.

Table 5 showcases the top 5 CSFs of the 10 articles focusing on ranking PPP CSFs by importance. *Favourable legal framework* emerges as the paramount element with four appearances in Table 5. The observation supports the finding in Table 4, where this CSF was the most frequent in the literature. This consensus underscores the pivotal role of a conducive legal framework in the success of PPP initiatives. *Available financial market* comes second, appearing three times as various interpretations such as "*Favourable investment environment*" and "*Involvement of development banks and financial institutions*". PPPs can be funded via multiple channels. PPPs can seek bilateral or multilateral funding through a single institute or consortium of financiers, respectively. PPPs can also seek capital from debt markets through securitisation [29]. Hence, the presence and capacity of financiers within a country is key to successful PPPs, primarily due to the fundamental reliance of PPPs on private funding [41,68]. *Good governance* comes third, including synonyms such as "*effective leadership*" and "*effective management*". Research indicates governance is a principal element of PPP success and failure [69,70,77]. Wange et al. [71] further elaborated that good governance can mitigate societal and environmental stigma towards PPP.

Table 5. Ranking of critical success factors of public–private partnerships.

Papers	**[69]**	**[55]**	**[66]**	**[39]**	**[52]**
Themes/Ranking	**General PPPs**	**PPP Disputes**	**Transfer Phase**	**Water PPPs**	**Cross Country Comparison**
1	Good governance	Ensuring adequate project planning and control	Contract system	Establish models for realistic revenue projections	Favourable legal and regulatory framework
2	Commitment and responsibility of public and private sectors	Providing effective leadership	Transfer acceptance criteria	Thorough planning for project viability	Transparent PPP process
3	Favourable legal framework	Formulating appropriate strategies for the management of stakeholders	Acceptable assets	Show high level of transparency	Clarity of roles and responsibilities among parties
4	Sound economic policy	Confirming clear goals and objectives of the project	Transfer arrangement	Legal framework stipulating policy continuity	Political stability

Table 5. *Cont.*

Papers	[69]	[55]	[66]	[39]	[52]
Themes/Ranking	**General PPPs**	**PPP Disputes**	**Transfer Phase**	**Water PPPs**	**Cross Country Comparison**
5	Available financial market	Ensuring effective communication	Transferred assets	Transparent, cost-effective, and competitive procurement	Appropriate risk allocation and sharing
Papers	[61]	[24]	[64]	[70]	[63]
Themes/Ranking	**Transfer Phase**	**General PPPs**	**Unsolicited Projects**	**Relationship Management**	**International Experts Opinion**
1	Clear procedures for initiating PPPs	Transparency in the procurement process	Adequacy of legislation encourages private sector	Commitment and participation of senior executives	Effective risk management
2	Political/parliamentary support	Effective management control	The cost incurred by competing proposal	Defining the objectives of the RM strategy	Meeting output specifications
3	Establishing regional PPP offices	Good governance	Time for competing proposals	Integration of the different divisions of the organisation to meet RM objectives	Reliable and quality service operations
4	Involvement of development banks and financial institutions	Project economic viability	Fees to evaluate unsolicited proposals	Multidisciplinary team for implementation of the RM	Adherence to time
5	Central PPP unit has a knowledge centre	Favourable investment environment	Time to review USP proposals	Effective communication approaches among PPP parties	Satisfying the need for public facility/service

5.2. Beyond Isolation: Understanding the Interdependencies among Critical Success Factors in Public–Private Partnerships

A subset of the literature delved deeper into the interplay between identified CSFs. Employing sophisticated statistical techniques such as factor analysis and structural equation modelling, these studies endeavoured to unravel the intricate web of relationships among various success factors. This approach not only identifies individual elements but also sheds light on how these factors interact and influence one another within the complex PPP ecosystem.

One study explores the interrelationships among CSFs in PPP projects, focusing on the dynamics between public and private partners. Research revealed the subtle nature of their relationship and highlighted the inequalities in their responsibilities and resources [59]. Another study conducted in China investigated the CSFs of PPP project refinancing and uncovered pivotal factors such as asset quality and security design that drive the success of PPP asset-backed securitisation (PPP-ABS). The study resulted in a structural equation modelling web of inter-relationships of multiple factors reflecting a positive influence on PPP-ABS success. Findings provided valuable insight for investors and financial stakeholders [72]. Ameyaw et al. [73] investigated CSFs for attracting private sector participation in water supply projects in developing countries. They conducted a structured questionnaire survey of international PPP expert opinions, identifying key factors required to attract the private sector to water PPPs. The analysis revealed strong agreement among experts regarding the significance and rankings of CSFs, adding credibility to the findings. The study was confined to the water sector, limiting its applicability to other infrastructure areas. Moreover, the research primarily reflects the opinions of PPP experts, potentially overlooking the viewpoints of other stakeholders. Hai et al. [57] took a more comprehensive approach by identifying and assessing six primary clusters of CSFs, enhancing their applicability to various types of PPP infrastructure projects in developing countries. They formulated a theoretical structural equation model based on a review of prior studies and

an investigation involving 216 PPP infrastructure professionals and practitioners. While the study covers a wide range of CSFs, it does not delve deeply into sector-specific nuances.

Overall, the reviewed papers contributed valuable insights into CSFs and their interplay with PPP infrastructure projects, but they differ in their scopes, approaches, and contexts. Shi [59] tackled financial aspects, primarily PPP securitisation, whereas Ameyaw et al. [73] and Hai et al. [57] provided sector-specific insights.

5.3. Shaping Success: Examining the Utilisation of CSFs in PPPs

Taking an interventive turn, some scholars utilised the identified CSFs to construct comprehensive frameworks, best practice schemes, and success predictive models. These endeavours aim not only to enhance theoretical understanding but also to provide actionable insights for stakeholders engaged in planning, implementing, and evaluating public–private partnerships.

One of the existing studies gave a best practice framework for PPP implementation in Ghana's construction projects. By using a multi-stage analysis of critical success factors and some expert opinions, this framework addresses local context and standardises PPP practices [78]. Liu et al. [74] took a different approach to utilising CSFs of infrastructure PPPs. They proposed a life-cycle CSF framework with a project success and project management success perspective and a learning mechanism embedded within it. The primary objective of that research was to provide a comprehensive understanding of the factors critical to successfully implementing PPP projects and to enhance stakeholders' understanding of PPP contract strategy. Moreover, the paper primarily focuses on CSFs but provides insights into risk management embedded within the framework, which is a critical aspect of PPP project success. While the framework is valuable, it is not tailored to the unique challenges and contexts of developing countries, which may limit its applicability in such settings. Another paper by Munoz-Jofre et al. [75] introduced a selectivity index to evaluate PPP project feasibility in the urban water and sanitation sector in Latin America and the Caribbean. While the index offers a practical tool, the paper does not thoroughly explore potential challenges or limitations in applying the index. Additionally, the lack of explicit connections between the index and broader sustainability aspects of PPP projects raises questions about the tool's comprehensive utility. A study by Osei-Kyei and Chan [40] contributed significantly by developing a practical predictive model for PPP project success in a developing country, using Ghana as a case study. This model has practical implications for PPP practitioners in Ghana and similar regions. They emphasise the importance of government commitment, sound economic policy, and appropriate risk allocation as key predictors of success in Ghanaian PPP projects. The authors used a questionnaire survey with experienced PPP experts and employed regression analysis, ANOVA, and other statistical tests. The use of these rigorous statistical methods, including regression analysis and various tests, enhanced the validity and reliability of their model. Another study by Ameyaw and Chan [23] addressed the success factors for PPPs in the specific context of water supply projects in developing countries, making it highly relevant to the specific challenges in this sector. They derived 14 perceived CSFs from project cases and literature, establishing five critical success factor groups (CSFGs) through factor analysis. These five key CSFGs are the commitment of partners, strength of consortium, asset quality and social support, political environment, and national PPP unit. Their research aimed to provide a predictive tool for evaluating project success adds practical value and can aid decision-makers in assessing PPP viability. Collectively, this existing literature extends the discourse on PPP effectiveness to practitioners, researchers, and stakeholders by providing tools and frameworks aiding in achieving success in diverse PPP contexts.

6. Conclusions

This systematic review has provided insights into critical success factors within the realm of public–private partnerships, with a focus on literature published between 2013 and 2023 addressing water and power PPP projects. By adhering to the PRISMA protocol,

we systematically identified and analysed 30 pertinent articles, illuminating key trends and patterns in PPP research. Notably, our findings reveal scarcity in papers focused specifically on power PPP projects, which highlights a potential gap in the literature warranting further investigation. Methodologically, the prevalence of quantitative research methods among the reviewed papers reflects a predominant approach in examining CSFs within PPPs.

Numerous research papers exist which shed light on the critical success factors of public–private partnership projects. Within the realm of public–private partnerships, scholarly investigations exhibit a diverse array of approaches. Some researchers undertake the meticulous task of identifying critical success factors specific to PPP contexts, while others engage in quantitative analyses to rank these factors according to their perceived importance. Additionally, certain scholars delve into the realm of multivariate analysis to explore the complex interrelationships among CSFs. Concurrently, a subset of researchers applies CSFs as foundational elements to construct comprehensive frameworks, develop best practice models, and create predictive tools. These endeavours collectively contribute to a deeper understanding of PPP dynamics and offer practical insights for stakeholders involved in PPP planning, implementation, and evaluation. The findings collectively emphasise the multifaceted nature of PPP CSF research and underscore the need for continued scholarly inquiry and collaboration to advance our understanding of CSFs and enhance the efficacy of PPP implementation worldwide.

6.1. Research Gaps

It is noteworthy to mention that there is a common research limitation across these papers, notably,

- limited consideration of qualitative data and contextual nuances in developing countries, relying on quantitative and empirical methods may miss the deeper contextual understanding required for effective PPP implementation. In contrast, qualitative research methodologies can help in exploring the attitudes, perceptions, and behaviours of stakeholders that significantly influence decision-making processes. This is due to the nature of qualitative research, which tends to "discover (e.g., grounded theory), seek to understand (e.g., ethnography), explore a process (e.g., case study), describe the experiences (e.g., phenomenology), or report the stories (e.g., narrative research)" [79]. By employing qualitative approaches such as interviews, focus groups, and case studies, researchers can gain deeper insights into the contextual nuances within PPPs in developing countries, thus providing a more comprehensive understanding of the dynamics of PPP implementation.
- Research revealed that energy projects account for 52% of PPPs in developing countries [8]. The absence of power-focused studies in the corpus hampers the ability to fully explore the unique challenges and success factors inherent in power PPPs. Due to the paucity of research in this area, the generalisability of non-sector-specific PPP research findings may be nullified, particularly when attempting to apply insights to power-related PPPs. Each sector within the PPP domain presents its own set of complexities, ranging from regulatory frameworks to stakeholder dynamics and project delivery. Consequently, insights derived from non-sector-specific PPP research may overlook or inadequately address the requirements and considerations specific to power projects. For instance, while certain CSFs identified in generic PPP studies, such as "effective risk allocation" or "capacity building", may hold relevance across sectors, their implementation and effectiveness in the power sector could be vastly different due to the sector's unique characteristics and challenges.
- While there are valuable insights from the World Bank and development banks such as ISDB and CAF, there is a relatively low output of peer-reviewed journal articles on PPP CSFs in South America and the Middle East/North Africa regions, where the ten-year combined PPP commitments total to USD 300 billion. This poses challenges in achieving a comprehensive understanding of PPP dynamics globally. While PPPs are seeing uptake globally in developing countries, the patterns are not uniform; countries

endure different challenges in achieving PPP success. To illustrate, distressed countries may have issues with capacity building and securing funding, while resource-rich countries mainly struggle with policy failure and public rejection [80]. Regional disparities in research output may result in an imbalance in the representation of PPP experiences and challenges, potentially overlooking valuable insights and lessons learned from underrepresented regions.

Papers exhibit other limitations that may affect their applicability, robustness, and coherence. More representative sampling, clearer research gap justifications, deeper exploration of connections, and thorough discussions on limitations would strengthen the overall quality and impact of the research.

6.2. Path Forward

Future research can benefit from conducting ad hoc analyses on project implementations to test their adherence to critical success factors. By systematically examining the alignment between project outcomes and identified CSFs, researchers can offer valuable insights into the efficacy of these factors in predicting project success. Also, there exists a significant opportunity for scholars to leverage CSFs in the designing of training and development frameworks tailored for PPP practitioners. These frameworks could serve as structured guides for enhancing the capacity and competence of PPP stakeholders.

6.3. Limitations

It is crucial to acknowledge inherent limitations that may shape the review's scope and insights:

- The search parameters used following the PRISMA protocol may have inadvertently excluded valuable articles that could contribute to a comprehensive understanding of PPPs in developing countries.
- Merely addressing developing countries may have overlooked valuable insights and successful PPP experiences from developed countries, which could provide important comparative perspectives and lessons learned.
- The sole focus on critical success factors in the review may be considered a limitation, as future research could benefit from examining risk factors and failure factors as well. This broader perspective would offer a more complete understanding of PPP projects' dynamics and outcomes.

Author Contributions: Conceptualisation, K.A. and M.S.; methodology, K.A. and M.S.; software, K.A.; validation, M.S. and K.R.; formal analysis, K.A. and M.S.; investigation, K.A.; resources, K.A., M.S. and K.R.; data curation, K.A.; writing—original draft preparation, K.A.; writing—review and editing, M.S. and K.R.; visualisation, K.A. and M.S.; supervision, M.S. and K.R.; project administration, M.S.; funding acquisition, K.A., M.S. and K.R. All authors have read and agreed to the published version of the manuscript.

Funding: This paper received no external funding.

Data Availability Statement: The data presented in this study are available upon request.

Acknowledgments: We wish to acknowledge the support of Loughborough University. Also, we gratefully acknowledge the invaluable contributions and insightful feedback provided by the independent reviewers, whose expertise and constructive critiques greatly enhanced the quality and depth of this research article.

Conflicts of Interest: The funders had no role in the design of the study; in the collection, analyses, or interpretation of data; in the writing of the manuscript; or in the decision to publish the results.

References

1. United Nations Sustainable Development. *The Challenge of Local Government Financing in Developing Countries*; United Nations Human Settlements Programme: Nairobi, Kenya, 2016.
2. Susantono, B. *Government Policies in the Infrastructure Development in Indonesia*; Sepuluh Nopember Institute of Technology: Surabaya, Indonesia, 2010.
3. Leigland, J. Public-Private Partnerships in Developing Countries: The Emerging Evidence-Based Critique. *World Bank Res. Obs.* **2018**, *33*, 103–134. [CrossRef]
4. Pessoa, A. *Public-Private Sector Partnerships in Developing Countries: Prospects and Drawbacks*; Universidade do Porto, Faculdade de Economia do Porto: Porto, Portugal, 2006.
5. Yescombe, E.; Farquharson, E. *Public-Private Partnerships for Infrastructure: Principles of Policy and Finance*, 2nd ed.; Elsevier: Amsterdam, The Netherlands, 2018; ISBN 978-0-08-100766-2.
6. The World Bank—PPP Legal Resource Center What Are PPPs? *PPP LGS*. Available online: https://ppp.worldbank.org/public-private-partnership/about-us/about-public-private-partnerships (accessed on 15 November 2023).
7. Levy, S.M. *Public-Private Partnerships*; American Society of Civil Engineers: Reston, VA, USA, 2011; p. 2. ISBN 978-0-7844-1013-4.
8. Li, Z.; Wang, H. Exploring Risk Factors Affecting Sustainable Outcomes of Global Public–Private Partnership (PPP) Projects: A Stakeholder Perspective. *Buildings* **2023**, *13*, 2140. [CrossRef]
9. Daniel, D.R. Management Information Crisis. *Harv. Bus. Rev.* **1961**, *39*, 111–116.
10. Rockart, J. Chief Executives Define Their Own Data Needs. *Harv. Bus. Rev.* **1979**, *57*, 81–93. [PubMed]
11. Freund, Y. Critical Success Factors. *Plan. Rev.* **1988**, *16*, 20–25. [CrossRef]
12. Alavi, M.; Keen, P.G.W. Business Teams in an Information Age. *Inf. Soc.* **1989**, *6*, 179–195. [CrossRef]
13. Le Blanc, L.A. An Assessment of DSS Performance. The Impact of Utilization and Closure. *Inf. Manag.* **1991**, *20*, 137–148. [CrossRef]
14. Fuller, M.K.; Swanson, E.B. Information Centers as Organizational Innovation: Exploring the Correlates of Implementation Success. *J. Manag. Inf. Syst.* **1992**, *9*, 47–67. [CrossRef]
15. Pinto, J.K.; Slevin, D.P. Critical Factors in Successful Project Implementation. *IEEE Trans. Eng. Manag.* **1987**, *EM-34*, 22–27. [CrossRef]
16. Slevin, D.P.; Pinto, J.K. Balancing Strategy and Tactics in Project Implementation. *Sloan Manag. Rev.* **1987**, *29*, 33–41.
17. Pinto, J.K.; Covin, J.G. Critical Factors in Project Implementation: A Comparison of Construction and R&D Projects. *Technovation* **1989**, *9*, 49–62. [CrossRef]
18. PRINCE2 Critical Success Factors in Project Management. 2019. Available online: https://www.prince2.com/uae/blog/critical-success-factors (accessed on 25 August 2023).
19. Spalek, S. *Critical Success Factors in Project Management. To Fail or Not to Fail, That Is the Question!* Project Management Institute: Edinburgh, UK, 2005.
20. Li, B.; Akintoye, A.; Edwards, P.J.; Hardcastle, C. Critical Success Factors for PPP/PFI Projects in the UK Construction Industry. *Constr. Manag. Econ.* **2005**, *23*, 459–471. [CrossRef]
21. Zhang, X. Critical Success Factors for Public-Private Partnerships in Infrastructure Development. *J. Constr. Eng. Manag.* **2005**, *131*, 3–14. [CrossRef]
22. Chou, J.-S.; Ping Tserng, H.; Lin, C.; Yeh, C.-P. Critical Factors and Risk Allocation for PPP Policy: Comparison between HSR and General Infrastructure Projects. *Transp. Policy* **2012**, *22*, 36–48. [CrossRef]
23. Ameyaw, E.E.; Chan, A.P.C. Critical Success Factors for Public-Private Partnership in Water Supply Projects. *Facilities* **2016**, *34*, 124–160. [CrossRef]
24. Babatunde, S.O.; Perera, S.; Zhou, L.; Udeaja, C. Stakeholder Perceptions on Critical Success Factors for Public-Private Partnership Projects in Nigeria. *Built Environ. Proj. Asset Manag.* **2016**, *6*, 74–91. [CrossRef]
25. Osei-Kyei, R.; Chan, A.P.C. Implementing Public–Private Partnership (PPP) Policy for Public Construction Projects in Ghana: Critical Success Factors and Policy Implications. *Int. J. Constr. Manag.* **2017**, *17*, 113–123. [CrossRef]
26. Ibem, E.O. An Assessment of the Role of Government Agencies in Public-Private Partnerships in Housing Delivery in Nigeria. *J. Constr. Dev. Ctries.* **2010**, *15*, 23–48.
27. Lloyd Owen, D.A. Public–Private Partnerships in the Water Reuse Sector: A Global Assessment. *Int. J. Water Resour. Dev.* **2016**, *32*, 526–535. [CrossRef]
28. Savrukov, A.N.; Savrukov, N.T.; Kozlovskaya, E.A. Assessment of the State and Level of Development of Public-Private Partnership Projects in the Subjects of the Russian Federation. *Vopr. Ekon.* **2018**, 131–141. [CrossRef]
29. Lu, Z.; Peña-Mora, F.; Wang, S.Q.; Liu, T.; Wu, D. Assessment Framework for Financing Public-Private Partnership Infrastructure Projects through Asset-Backed Securitization. *J. Manag. Eng.* **2019**, *35*. [CrossRef]
30. Ullah, F.; Ayub, B.; Siddiqui, S.Q.; Thaheem, M.J. A Review of Public-Private Partnership: Critical Factors of Concession Period. *J. Financ. Manag. Prop. Constr.* **2016**, *21*, 269–300. [CrossRef]
31. Zhang, Y.; Hao, S. Research on Critical Success Factors and Mechanism of PPP Project of Urban Rail Transit-Based on the Analysis of Typical Cases at Home and Abroad. *Tumu Gongcheng Xuebao/China Civ. Eng. J.* **2020**, *53*, 116–128.
32. Ahmed, M.; Garvin, M. Review of Critical Success Factors and Key Performance Indicators in Performance Assessment of P3 Transportation Projects. *J. Manag. Eng.* **2022**, *38*. [CrossRef]

33. UCL What Are Systematic Reviews? 2023. Available online: https://library-guides.ucl.ac.uk/systematic-reviews/what (accessed on 2 October 2023).
34. Akomea-Frimpong, I.; Jin, X.; Osei-Kyei, R. A Holistic Review of Research Studies on Financial Risk Management in Public–Private Partnership Projects. *Eng. Constr. Archit. Manag.* **2021**, *28*, 2549–2569. [CrossRef]
35. Jayasuriya, S.; Zhang, G.; Jing Yang, R. Challenges in Public Private Partnerships in Construction Industry. *Built Environ. Proj. Asset Manag.* **2019**, *9*, 172–185. [CrossRef]
36. Pollock, A.; Berge, E. How to Do a Systematic Review. *Int. J. Stroke* **2018**, *13*, 138–156. [CrossRef]
37. Tam, W.W.S.; Tang, A.; Woo, B.; Goh, S.Y.S. Perception of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) Statement of Authors Publishing Reviews in Nursing Journals: A Cross-Sectional Online Survey. *BMJ Open* **2019**, *9*, e026271. [CrossRef] [PubMed]
38. Shamseer, L.; Moher, D.; Clarke, M.; Ghersi, D.; Liberati, A.; Petticrew, M.; Shekelle, P.; Stewart, L.A. Preferred Reporting Items for Systematic Review and Meta-Analysis Protocols (PRISMA-P) 2015: Elaboration and Explanation. *BMJ* **2015**, *349*, g7647. [CrossRef]
39. Dithebe, K.; Aigbavboa, C.O.; Thwala, W.D.; Oke, A.E. Factor Analysis of Critical Success Factors for Water Infrastructure Projects Delivered under Public–Private Partnerships. *J. Financ. Manag. Prop. Constr.* **2019**, *24*, 338–357. [CrossRef]
40. Osei-Kyei, R.; Chan, A.P.C. Model for Predicting the Success of Public–Private Partnership Infrastructure Projects in Developing Countries: A Case of Ghana. *Archit. Eng. Des. Manag.* **2019**, *15*, 213–232. [CrossRef]
41. Berisha, A.; Kruja, A.; Hysa, E. Perspective of Critical Factors toward Successful Public–Private Partnerships for Emerging Economies. *Adm. Sci.* **2022**, *12*, 160. [CrossRef]
42. de Faria Silva, R.; Souza, A.; Kaczam, F.; Dalazen, L.L.; da Silva, W.V.; da Veiga, C.P. Public-Private Partnerships and Value for Money. *Public Work. Manag. Policy* **2022**, *27*, 347–370. [CrossRef]
43. Fu, L.; Sun, H.; Fang, Y.; Xu, K. A Systematic Review of the Public-Private Partnership Literature Published between 2012 and 2021. *J. Civ. Eng. Manag.* **2023**, *29*, 238–252. [CrossRef]
44. Yu, F.; Liu, C.; Sharmin, S. Performance, Usability, and User Experience of Rayyan for Systematic Reviews. *Proc. Assoc. Inf. Sci. Technol.* **2022**, *59*, 843–844. [CrossRef]
45. Partington, G.; Cro, S.; Mason, A.; Phillips, R.; Cornelius, V. Design and Analysis Features Used in Small Population and Rare Disease Trials: A Targeted Review. *J. Clin. Epidemiol.* **2022**, *144*, 93–101. [CrossRef] [PubMed]
46. Basabih, M.; Prasojo, E.; Rahayu, A.Y.S. Hospital Services under Public-Private Partnerships, Outcomes and, Challenges: A Literature Review. *J. Public Health Res.* **2022**, *11*, 227990362211157. [CrossRef] [PubMed]
47. Osei-Kyei, R.; Chan, A.P.C. Review of Studies on the Critical Success Factors for Public–Private Partnership (PPP) Projects from 1990 to 2013. *Int. J. Proj. Manag.* **2015**, *33*, 1335–1346. [CrossRef]
48. Adabre, M.A.; Chan, A.P.C. The Ends Required to Justify the Means for Sustainable Affordable Housing: A Review on Critical Success Criteria. *Sustain. Dev.* **2018**, *27*, 781–794. [CrossRef]
49. World Bank Countries and Economies. 2023. Available online: https://data.worldbank.org/country (accessed on 23 August 2023).
50. Sinha, P.; Shankar, R.; Vrat, P.; Mathur, S. Power Distribution Reforms: Delhi's Public–Private Partnership Model: A Boost to the Sector. *J. Adv. Manag. Res.* **2020**, *17*, 226–250. [CrossRef]
51. Howard, G.S.; Cole, D.A.; Maxwell, S.E. Research Productivity in Psychology Based on Publication in the Journals of the American Psychological Association. *Am. Psychol.* **1987**, *42*, 975–986. [CrossRef]
52. Osei-Kyei, R.; Chan, A.P.C. Empirical Comparison of Critical Success Factors for Public-Private Partnerships in Developing and Developed Countries A Case of Ghana and Hong Kong. *Eng. Constr. Archit. Manag.* **2017**, *24*, 1222–1245. [CrossRef]
53. Osei-Kyei, R.; Chan, A.P.C. Public Sector's Perspective on Implementing Public–Private Partnership (PPP) Policy in Ghana and Hong Kong. *J. Facil. Manag.* **2018**, *16*, 175–196. [CrossRef]
54. Ahenkan, A. Mainstreaming Public–Private Partnership in National Development: How Ready Is Ghana? *Bus. Strategy Dev.* **2019**, *2*, 220–227. [CrossRef]
55. Dithebe, K.; Thwala, W.D.D.; Aigbavboa, C.O.; Edwards, D.J.; Hayhow, S.; Talebi, S. Stakeholder Management in the Alleviation of Legal and Regulatory Disputes in Public-Private Partnership Projects in South Africa. *J. Eng. Des. Technol.* **2023**, *21*, 325–342. [CrossRef]
56. Gide Loyrette Nouel. Concession Laws Assessment 2007/8. 2008. Available online: https://www.ebrd.com/downloads/legal/concessions/conces08.pdf (accessed on 24 February 2024).
57. Hai, D.T.; Toan, N.Q.; Van Tam, N. Critical Success Factors for Implementing PPP Infrastructure Projects in Developing Countries: The Case of Vietnam. *Innov. Infrastruct. Solut.* **2022**, *7*, 1–13. [CrossRef]
58. Sanni, A.O. Factors Determining the Success of Public Private Partnership Projects in Nigeria. *Constr. Econ. Build.* **2016**, *16*, 42–55. [CrossRef]
59. Shi, S.; Chong, H.-Y.; Liu, L.; Ye, X. Examining the Interrelationship among Critical Success Factors of Public Private Partnership Infrastructure Projects. *Sustainability* **2016**, *8*, 1313. [CrossRef]
60. Deng, B.; Zhou, D.; Zhao, J.; Yin, Y.; Li, X. Fuzzy Synthetic Evaluation of the Critical Success Factors for the Sustainability of Public Private Partnership Projects in China. *Sustainability* **2021**, *13*, 2551. [CrossRef]

61. Amović, G.; Maksimović, R.; Bunčić, S. Critical Success Factors for Sustainable Public-Private Partnership (PPP) in Transition Conditions: An Empirical Study in Bosnia and Herzegovina. *Sustainability* **2020**, *12*, 7121. [CrossRef]
62. Ghanem, M.; Ghaley, M. Building a Framework for a Resilience-Based Public Private Partnership. *J. Destin. Mark. Manag.* **2024**, *31*, 100849. [CrossRef]
63. Osei-Kyei, R.; Chan, A.P.C.; Javed, A.A.; Ameyaw, E.E. Critical Success Criteria for Public-Private Partnership Projects: International Experts' Opinion. *Int. J. Strateg. Prop. Manag.* **2017**, *21*, 87–100. [CrossRef]
64. Mallisetti, V.; Dolla, T.; Laishram, B. Motivations and Critical Success Factors of Indian Public–Private Partnership Unsolicited Proposals. *J. Inst. Eng. (India) Ser. A* **2021**, *102*, 225–236. [CrossRef]
65. Wibowo, A.; Alfen, H.W. Government-Led Critical Success Factors in PPP Infrastructure Development. *Built Environ. Proj. Asset Manag.* **2015**, *5*, 121–134. [CrossRef]
66. Bao, F.; Chen, C.; Martek, I.; Chan, A.P.C.; Jiang, W. Factors Underpinning the Successful Return of Public-Private Partnership Projects to Public Authority: Assessing the Critical Success Factors of the Transfer Phase of Chinese Water Projects. *J. Infrastruct. Syst.* **2023**, *29*. [CrossRef]
67. Chou, J.-S.; Pramudawardhani, D. Cross-Country Comparisons of Key Drivers, Critical Success Factors and Risk Allocation for Public-Private Partnership Projects. *Int. J. Proj. Manag.* **2015**, *33*, 1136–1150. [CrossRef]
68. Sehgal, R.; Dubey, A.M. Identification of Critical Success Factors for Public–Private Partnership Projects. *J. Public Aff.* **2019**, *19*, 1956. [CrossRef]
69. Ismail, S. Critical Success Factors of Public Private Partnership (PPP) Implementation in Malaysia. *Asia-Pac. J. Bus. Adm.* **2013**, *5*, 6–19. [CrossRef]
70. Zou, W.; Kumaraswamy, M.; Chung, J.; Wong, J. Identifying the Critical Success Factors for Relationship Management in PPP Projects. *Int. J. Proj. Manag.* **2014**, *32*, 265–274. [CrossRef]
71. Wang, L.; Zhang, P.; Zhang, P.; Li, R.; Zhang, Y.; Wu, Y. A Systematic Approach for Public-Private Partnership Projects CSFs Evaluation. *Eng. Constr. Archit. Manag.* **2018**, *25*, 1127–1145. [CrossRef]
72. Liu, L.; Guo, Y.; Chen, C.; Martek, I. Determining Critical Success Factors for Public–Private Partnership Asset-Backed Securitization: A Structural Equation Modeling Approach. *Buildings* **2021**, *11*, 199. [CrossRef]
73. Ameyaw, E.E.; Chan, A.P.C.; Owusu-Manu, D.-G. A Survey of Critical Success Factors for Attracting Private Sector Participation in Water Supply Projects in Developing Countries. *J. Facil. Manag.* **2017**, *15*, 35–61. [CrossRef]
74. Liu, J.; Love, P.E.D.; Smith, J.; Regan, M.; Davis, P.R. Life Cycle Critical Success Factors for Public-Private Partnership Infrastructure Projects. *J. Manag. Eng.* **2015**, *31*. [CrossRef]
75. Munoz-Jofre, J.; Hinojosa, S.; Mascle-Allemand, A.-L.; Temprano, J. A Selectivity Index for Public-Private Partnership Projects in the Urban Water and Sanitation Sector in Latin America and the Caribbean. *J. Environ. Manag.* **2023**, *335*, 117564. [CrossRef]
76. Chyung, S.Y.Y.; Barkin, J.R.; Shamsy, J.A. Evidence-Based Survey Design: The Use of Negatively Worded Items in Surveys. *Perform. Improv.* **2018**, *57*, 16–25. [CrossRef]
77. Alves, H. *The Emerald Handbook of Public–Private Partnerships in Developing and Emerging Economies*; Leitão, J., de Morais Sarmento, E., Aleluia, J., Eds.; Emerald Publishing Limited: Bentley, UK, 2017; ISBN 978-1-78714-494-1.
78. Osei-Kyei, R.; Chan, A.P.C. A Best Practice Framework for Public-Private Partnership Implementation for Construction Projects in Developing Countries: A Case of Ghana. *Benchmarking* **2018**, *25*, 2806–2827. [CrossRef]
79. Creswell, J.W. *Qualitative Inquiry & Research Design + Mixed Methods Research*; SAGE Publications: New York, NY, USA, 2017.
80. Biygautane, M.; Neesham, C.; Al-Yahya, K.O. Institutional Entrepreneurship and Infrastructure Public-Private Partnership (PPP): Unpacking the Role of Social Actors in Implementing PPP Projects. *Int. J. Proj. Manag.* **2019**, *37*, 192–219. [CrossRef]