

# The Regulatory and Institutional Framework of Public-Private Partnership: Cases of France, Germany, and Russia

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**Abstract:** *Globally public-private partnerships (PPP) have become one of the tools for effective infrastructure development. In previous years, there have been few peer-reviewed studies of the PPP framework, namely on elements contributing to the effectiveness of PPP projects and finding interrelationships between them. This study identifies the elements of the regulatory and institutional framework of PPP as: the legal regulation of PPP, units for PPP development, and state policy in PPP. It also reveals their mutual influence. These conclusions were based on an in-depth systematic literature review and a questionnaire survey. The analyses of such PPP-successful countries - France, Germany, and Russia - help to confirm our logical conclusions. Besides this, several good cases concerning the quality of the regulatory and institutional PPP framework are highlighted. The study has also noted four stages of the PPP policy evolution: PPP as a new tool for infrastructure development, PPP as a tool for most projects, PPP as a tool for territorial development, and PPP as a tool to achieve sustainable development goals. This finding remains unknown in peer-reviewed literature before. The results of the study can help PPP practitioners to create more effective national PPP strategies.*

**Keywords:** Public-private partnerships; Infrastructure; Infrastructure development; Sustainable Development Goals; State policy.

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## 1. Introduction

Public-private partnerships (PPP) are seen as a tool to encourage private investment in infrastructure sectors (Akintoye et al., 2003; Delmon, 2010). The modern understanding of PPP came from the 1990s when the United Kingdom (UK) government announced the Private Finance Initiative (PFI) (Boardman et al., 2015). The factors leading PPP to success are mainly determined by the quality of institutional and regulatory frameworks (Chan et al., 2010; Hwang et al., 2013; Zhang et al., 2015; Zhao et al., 2010). Some studies have explored the elements that form PPP (IBRD, 2017; Farquharson et al., 2011). Most of such studies were conducted between 2010 and 2017. In the last five to six years, there has been a dearth of new peer-reviewed studies on the impact of institutional factors on the development of national PPP markets. In addition, the specific institutional and regulatory frameworks' best practices for PPP development have not been sufficiently discussed in the literature.

This research hypothesizes that institutional and regulatory frameworks are still one of the main drivers for the development of national PPP markets. Therefore, this study attempts to answer the following questions: (1) What core elements of institutional and regulatory PPP frameworks have driven the development of national PPP markets in recent years? (2) Are there any interrelationships between the core elements of the PPP framework? (3) What are the specific best practices that stimulate the development of national PPP markets? (4) Are there any historical regularities of the PPP state policy in countries with well-developed PPP markets?

The study concludes that the core elements of the regulatory and institutional PPP framework are still the same. They are legal regulation of PPP, state policy in PPP, and organisations (units) for PPP development. Besides, the first and the second elements affect and form the third element. In addition, several good practices of the PPP framework development are identified. This part of the research is based on case studies of PPP in France, Germany, and Russia. These countries were chosen because France and Germany are long-established in this market (inter alia, they are in the top-3 ranking by value and number of PPP projects accumulated from 2011 to 2020 [EPEC 2020]), and Russia showed rapid growth of the national PPP market despite it only beginning to implement PPP in recent years (i.e., from 2010 to 2020 the total value of PPP projects increased from US\$4 million

to US\$59.7 billion). Also, a model of evolutionary stages of public policy in PPP is proposed. It is believed that the findings will help countries with emerging PPP markets to create new opportunities for their intensive growth.

## **2. Literature Review**

The literature review is based on scientific peer-reviewed international journals and materials developed by the European Commission, the World Bank Group, and the Ministry of Economic Development of the Russian Federation. PPP can be considered from different points. Many studies analyse PPP at the micro-level (i.e., stand-alone infrastructure projects), and consider such aspects as project management, risk management, procurement, construction management, financing, etc. (Kwak et al., 2009; Yescombe, 2007). From this point of view, PPP is a method of infrastructure project funding by the private party (Bennett & Iossa, 2006).

Some studies have explored institutional aspects of PPP. Chou et al. (2015: 206) suggested the term “PPP institutional framework (IF)”. He notes that PPP IF “comprises formal and informal rules, policies, regulations, organisations, public awareness, and the socio-economic context” and conclude that IF helps to increase the effectiveness of PPPs. One more understanding of the PPP institutional framework links to a specific PPP law, mechanisms for litigation and early termination, guidelines on risk allocation, rules/limits on the size of PPPs, and formal rules on accounting (Burger et al., 2009). The organising body for PPP development forms an important part of the institutional framework. In different countries, they have different names, i.e., PPP centres, PPP units, PPP task forces, etc. Typically, they have advisory functions and less frequently public procurement tasks (IBRD, 2017). Thus, in this article, the common name “PPP unit” will be used.

One more point important to understanding PPP is the regulatory framework. It includes corresponding government policy and legislation (Verhoest et al., 2015). Some studies note the leading role of legal regulation and IF for PPP development at the level of stand-alone countries (Emek, 2015; Zhang et al., 2015). Aulich (2010) used the example of Australia to show the central role of the government in PPP development. Singaravelloo (2010) noted that the government should provide clear leadership support for PPP projects, otherwise they would fail.

Most authors consider PPP to be a more effective tool (compared to traditional procurement) (Engel et al., 2010). It implies less financial and time costs needed to implement an infrastructure project (Verweij & Meerkerk, 2020). Some researchers highlight factors leading PPPs to success (Chan et al., 2010; Hwang et al., 2013; Zhang, 2005). Heldeweg and Sanders (2013) suggested three common patterns of effective PPPs: markets, networks, and government hierarchies. The international guideline on PPP governance from the Organisation for Economic Co-operation and Development (OECD, 2012) includes recommendations regarding the need to define a clear IF supported by competent and well-resourced authorities.

At the same time, Wang et al. (2020) concluded that PPP could lead to PPP failures. For instance, such projects as light-rail transit systems in Kuala Lumpur (Abdul-Aziz, 2006) and the Underground in London (Khoteeva & Khoteeva, 2017), are examples of bad PPP. Thus, PPP project failure is related to such risk factors, lack of support from the government, unavailability of finance, construction time delay, inadequate experience in PPP, unstable government, etc. (Hwang et al., 2013).

### **3. Methodology and Data**

The study involves three main steps: (1) An in-depth literature review - To identify the core elements of the regulatory and institutional PPP framework that support the development of the national PPP markets; (2) A questionnaire survey - This contributed to the identification of the interrelationships between the core elements of the PPP framework; and (3) A case-study analysis - This highlights the specific good practices of the development of national PPP markets and the historical regularities of PPP state policy.

#### **3.1 *In-depth literature review***

A systematic literature review was conducted according to Tranfield et al. (2003). Google Scholar and ScienceDirect tools were used for searching peer-reviewed papers published in English. The time frame of the search was not limited. The keywords of the search were “PPP framework”, “PPP regulation”, “PPP institutes”, “PPP policy”, and “PPP development”. After

that, a content analysis of the selected literature was conducted. The next steps were: (1) to identify the factors of successful PPPs, (2) to combine detected approaches to an understanding of PPP with some types of PPP framework, and (3) to identify core elements of each PPP framework. Further, based on the qualitative analyses and the method of inductive reasoning (Copi et al., 2006), the factors, the framework, and their core elements were combined (Table 1). The identified core elements of the regulatory and institutional PPP framework became the base for designing questions for a further questionnaire survey.

### **3.2 Questionnaire survey**

A questionnaire survey was undertaken from January to March 2021. The questionnaire was designed in Google Forms. The questions were formulated in such a way that further logical analysis could identify the relationships between them. The following question and statements were included:

- How long have you been involved in PPP projects? (response options: less than three years; more than three years).
- State policy in PPP has a significant impact on forming and developing a PPP unit in the national PPP market (response options: strongly agree; strongly disagree).
- State policy in PPP has a significant impact on forming and developing a PPP legal regulation in the national PPP market (response options: strongly agree; strongly disagree).
- Legal regulation of PPP has a significant impact on forming and developing a PPP state policy in the evolution of the national PPP market (response options: strongly agree; strongly disagree).
- Legal regulation of PPP has a significant impact on forming and developing a PPP unit in the evolution of the national PPP market (response options: strongly agree; strongly disagree).
- A PPP unit has a significant impact on forming and developing a PPP state policy in the national PPP market (response options: strongly agree; strongly disagree).
- A PPP unit has a significant impact on forming and developing a PPP legal regulation in the national PPP market (response options: strongly agree; strongly disagree).

The link to the questionnaire was sent to the respondents *via* e-mail. The target respondents were the employees of public and private organisations that had experience in PPP. The total number of respondents was 162, including 54 respondents from France, 54 respondents from Germany, and 54 respondents from Russia. The contact base was formed in two ways. (1) As a result of online monitoring of PPP conference agendas during the last five years. If the e-mails of the correspondent speakers were available on the internet, they were recorded. (2) The PPP project databases (including Rosinfra - concerning Russian PPP projects [Rosinfra, 2021], Projektdatenbank - concerning German PPP projects [Projektdatenbank, 2021], and EPEC Data Portal - concerning French and German PPP projects [EPEC, 2021]) contain descriptions of PPP projects, including the names of private partners. Their official e-mails were used for sending the questionnaire. Also, the invitations to take part in the survey were sent to the national and regional PPP centres of each country (i.e. to their official addresses). In the accompanying letter, the representatives of the responding organisations were asked to involve a maximum number of PPP skilled employees in the survey.

As a result, 69 responses (42.6%) were received. To increase the validity of the results, the data were analysed separately for two groups of respondents, i.e., the first group included 47 respondents with PPP experience of more than three years, and the second group included 12 respondents with PPP experience of less than three years. It was hypothesized that in case of a significant (more than 20%) deviation of the results between both groups, the survey would not be valid. The formal terminology in logic was used to analyse the data, including a “necessary and sufficient” condition (Keith, 2017). A necessary condition must be present for another condition to occur, while a sufficient condition produces the said condition (Keith, 2017). The assertion that a statement is a “necessary and sufficient” condition of another means that the former is true if and only if the latter is true (Keith, 2017). The result of this step was the identification of the logical interrelationships between the core elements of the PPP framework. It will help to understand more clearly the sequence of the government actions to establish a PPP regulatory and institutional framework.

### 3.3 Case-study analysis

Three above-mentioned PPP project databases have been analysed. Due to this analysis, the volume of PPP markets, their dynamics, and the main prevailing PPP models in France, Germany, and Russia have been revealed. These databases were used because they are official. Besides, these countries lack any alternative or additional databases of PPP projects. The study assumes that examples of the above-mentioned PPP prosperous countries will help to identify the good practices for establishing a PPP framework and to confirm that the institutional and regulatory PPP framework continues to be a driving force in the development of national PPP markets. This step was based on a qualitative comparison of the countries’ practices and the data from the previous two stages.

## 4. Results

### 4.1 Core elements of an institutional and regulatory PPP framework

Four different approaches to successful PPPs have been identified. Each of them includes several correspondent factors. Also, three main types of PPP frameworks have been highlighted. They are micromanagement, regulatory, and institutional framework. For each framework, one core element has been identified (Table 1).

**Table 1:** Aggregation of the Success Factors of PPP Projects

Factors of successful PPPs	Type of PPP framework	Core element of the PPP framework (includes relevant factor of successful PPPs)
<b>Chan et al. (2010)</b>		
• Stable macroeconomic environment	Regulatory framework	State policy
• Shared responsibility between public and private sectors	Micromanagement framework	Project management
• The transparent and efficient procurement process	Regulatory framework	Legal regulation
• Stable political and social environment;	Regulatory framework	State policy
• Judicious government control	Regulatory framework	State policy

Factors of successful PPPs	Type of PPP framework	Core element of the PPP framework (includes relevant factor of successful PPPs)
<b>Hwang et al. (2013)</b>		
• Well-organised public agency	Institutional framework	Unit for PPP development
• Appropriate risk allocation and sharing	Regulatory & micromanagement framework	Project management
• Strong private consortium	Regulatory & micromanagement framework	State policy & Project management
• Transparency in the procurement process	Regulatory framework	Legal regulation & State policy
• Clear defined responsibilities and roles	Regulatory & micromanagement framework	Legal regulation & Project management
• Clarification of contract documents	Micromanagement framework	Project management
• Favourable legal framework	Regulatory framework	Legal regulation
• Shared authority between the public and private sector	Regulatory & micromanagement framework	Legal regulation & Project management
<b>Zhang (2015)</b>		
• Favourable investment environment	Regulatory framework	State policy
• Economic viability	Micromanagement framework	Project management
• Reliable concessionaire consortium with strong technical strength	Regulatory & micromanagement framework	State policy & Project management
• Sound financial package	Micromanagement framework	Project management
• Appropriate risk allocation via reliable contractual arrangements	Micromanagement framework	Project management
<b>Zhao et al. (2010)</b>		
• Project feasibility	Regulatory & micromanagement framework	State policy & Project management
• Project environment	Regulatory framework	State policy
• Project company	Micromanagement framework	Project management
• Project contractor	Micromanagement framework	Project management
• Project suppliers	Micromanagement framework	Project management

Source: Compiled by the author.



Thus, the understanding of the institutional and regulatory framework is very close to each other and includes the same elements (first of all, state policy and legislation). Therefore, two terms were combined into one. It was named “the regulatory and institutional framework of PPP”. The framework consists of three core elements: the legal regulation of PPP, organisations (units) for PPP development, and state policy in PPP. To confirm the hypothesis that these elements are still drivers for the national PPP markets, their role at the third step (i.e. case study analysis) of the survey was analysed. Note that the micromanagement PPP framework is beyond the scope of this study because it is not part of the aim of the current research and requires a different approach to explore.

**4.2 Interrelationships between core elements of the institutional and regulatory PPP framework**

The feedback from the respondents is presented in Table 2. To describe a conditional (implicational) relationship between the core elements of the PPP framework and to make perception easier, the next expressions were designated:

- “PPP legal regulation” as A
- “PPP unit” as B
- “State policy in PPP” as C.

**Table 2:** Feedback from Respondents

Statements	Specialists with PPP experience of more than three years		Specialists with PPP experience less than three years	
	Strongly agree	Strongly disagree	Strongly agree	Strongly disagree
1. <b>Legal regulation of PPP</b> has a significant impact on forming and developing a <b>PPP state policy</b> in the national PPP market	42 (89%)	5 (11%)	9 (75%)	3 (25%)
2. <b>Legal regulation of PPP</b> has a significant impact on forming and developing a <b>PPP unit</b> in the national PPP market	45 (96%)	2 (4%)	12 (100%)	0 (0%)

Statements	Specialists with PPP experience of more than three years		Specialists with PPP experience less than three years	
	Strongly agree	Strongly disagree	Strongly agree	Strongly disagree
3. <b>PPP unit</b> has a significant impact on forming and developing a <b>PPP state policy</b> in the national PPP market	6 (12%)	41 (88%)	1 (8%)	11 (92%)
4. <b>PPP unit</b> has a significant impact on forming and developing a <b>PPP legal regulation</b> in the national PPP market	3 (6%)	44 (94%)	0 (0%)	12 (100%)
5. <b>State policy in PPP</b> has a significant impact on forming and developing a <b>PPP unit</b> in the national PPP market	45 (96%)	2 (4%)	12 (100%)	0 (0%)
6. <b>State policy in PPP</b> has a significant impact on forming and developing a <b>PPP legal regulation</b> in the national PPP market	47 (100%)	0 (0%)	10 (83%)	2 (17%)

Source: Author's computation.

As a result, the data from Table 2 are presented as logical consequences (Table 3). The logical analysis of Table 3 shows: (1) All logical consequences are the same for both groups of respondents, i.e., the respondents with different PPP experiences have the same opinions. It makes the findings more valid. (2) Both of the logical consequences “C ⇒ A” and “A ⇒ C” are true. Therefore, legal regulation of PPP and PPP state policy are simultaneously necessary and sufficient for developing the national PPP market. The consequences “C ⇒ B” and “A ⇒ B” are false. They are not taken into consideration. The consequences “B ⇒ A” and “B ⇒ C” are true. It shows that the existence of a PPP unit is a sufficient condition for the legal regulation of PPP and PPP state policy (Figure 1). In practice, it means that to develop a national PPP market a government should firstly set up a PPP state policy and corresponding legislation. And should establish a PPP unit only after this. This finding could be useful to the authorities of emerging PPP markets when developing a national PPP strategy.

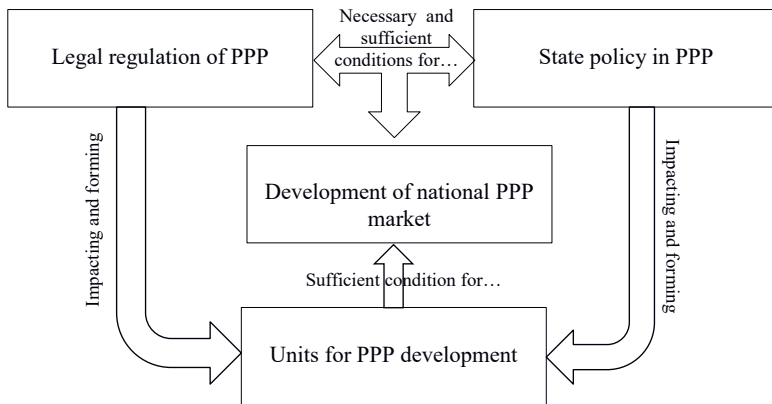
**Table 3:** Logical Consequences of Core Elements of the PPP Framework

No. of statements (from Table 3)	Logical consequence*	True/False** (for the 1st group of respondents)	True/False** (for the 2nd group of respondents)
1	$C \Rightarrow A$	T	T
2	$B \Rightarrow A$	T	T
3	$C \Rightarrow B$	F	F
4	$A \Rightarrow B$	F	F
5	$B \Rightarrow C$	T	T
6	$A \Rightarrow C$	T	T

Notes: \* - For example, the conditional statement “ $C \Rightarrow A$ ” shows “if C, then A” i.e., in formal logic, it means that A is said to be a necessary condition for C, and otherwise, C is said to be a sufficient condition for A. The simultaneous condition of necessity and sufficiency requires that both of the implications “ $A \Rightarrow C$ ” and “ $C \Rightarrow A$ ” are fulfilled (Keith, 2017). \*\* - In case when most of the respondents “strongly agree” with the correspondent statement (according to Table 3), it is marked in Table 4 as “T” (i.e., “True”). Otherwise, it is marked as “F” (i.e., “False”).

Source: Author’s computation.

**Figure 1:** Interrelationship Between Core Elements of the Regulatory and Institutional PPP Framework



Source: Author.

### 4.3 *Case study analyses*

#### 4.3.1 *Legal regulation of PPP*

In **France**, the history of PPP began from the first concessions in the Roman Empire. A lot of canals and bridges were built using concession agreements in the 16th and 17th centuries. Also, concession agreements were used to build many railways, metros, water, and power infrastructures in the 19th century. The legal regulation of the concession agreements appeared at the same time (EPEC, 2012).

Modern PPP legislation emerged in 1988 when the government introduced the new model of PPP based on the payment mechanism of the public party. The main reason for its appearance was to accelerate infrastructure development in the country. When the “Sapin” Law 93-122 of January 1993 came into force, concessions gave a private party the right to maintain and/or to operate the infrastructure entity for a limited period. A public party bore all operational risks (EPEC, 2012).

In 2004, the French President signed law No. 2004-559 “On PPP contracts”. According to this law, a partnership contract is an agreement under which the public party instructs the private partner to design, build (reconstruct), finance, operate, and maintain an infrastructure facility. The model is the same as a UK PFI-style contract. The main reason for the law was to fill in the gap between traditional work contracts and concession agreements (EPEC, 2012). As a result, there are two main PPP models in France now. These are concession agreements and partnership contracts (Vaissier et al., 2020). The main difference between them is in the payment mechanism. A concession uses a direct tariff, i.e., users of the service pay a fee directly to the private party.

As a result, since 2005, France has become one of the most buoyant markets in the world for PPP models based on an availability payment from a private party, and the value of partnership contracts achieved EUR15 billion, or 83% of total PPP projects (EPEC, 2012). The public authority is obliged to make the value-for-money (VfM) and financial feasibility analysis before initiating the procurement. At that time, the PPP legislation did not have any obligations to evaluate new PPP projects concerning socio-economic development goals.

The next stage of France’s PPP legislation began in 2019, when the PPP

Code entered into force. There had been more than 30 separate legislative acts on PPP in the country before it. The government believed that the uniform PPP Code would make it easier for many private companies to implement PPP projects. Primarily, it would stimulate small and medium-sized businesses to take part in new PPP projects. At the same time, PPP projects began to be implemented in strict compliance with the approved strategic plans for social and economic development.

In **Germany**, concessions have been known from the Middle Ages. In 2005 a special PPP acceleration law came into force. It helped to improve the institutional environment of PPP. There is still no specific PPP legislation in Germany. The legal regulation of PPP is mainly based on civil law and the Public Procurement Act. There are also regulating acts of PPP projects in specific sectors, such as energy and motorway (Bonhage, 2020). The legal framework provides the opportunity to implement a wide range of PPP models, including build-operate-transfer (BOT), Build-Transfer-Operate (BTO), build-own-operate (BOO), concessions, institutional PPP, etc. Despite this, approximately 70% to 80% of PPPs are based on the BTO model (Jacob et al., 2014).

In **Russia**, there are two main PPP approaches. The first model is a concession. It allows the implementation of only one PPP model - BTO. The federal law "On Concession Agreements", No. 115-FZ came into force in 2006. According to it, a public party does not have an obligation to calculate VfM criteria. Thus, from 2016 to 2019, about 500 to 600 concession agreements were concluded annually in Russia (Ministry of Economic Development of the Russian Federation, 2020).

The second PPP approach was based on regional legislative acts. The first of them also came into force in 2006. It was St. Petersburg's regional law on PPP. In 2016, the federal law "On Public-Private Partnerships, Municipal-Private Partnerships in the Russian Federation", No. 224-FZ was enacted. All types of PPP models may be implemented according to this federal law. It establishes the obligation of public authorities to make a VfM analysis before the beginning of a procurement procedure. Only 25 PPP projects were implemented under this federal law at the end of 2019 (Ministry of Economic Development of the Russian Federation, 2020).

Thus, the above-made analysis shows that the countries use different legal regimes. However, all of them have a relatively high level of PPP development. The case study shows that the BTO model is the most

frequently used form of PPP in these countries. It should be defined as a best practice because it mitigates the risks of asset loss for the public party. As demonstrated above, the implementation of PPP projects could be possible only in a PPP legal framework. At the same time, a PPP legal regulation for each country establishes the specifics of the implementation of PPP models (for instance, differences in payment mechanisms, etc.). As a result, specific PPP models are becoming prevalent in each country. This suggests that a PPP legal regulation does not just stimulate PPP development but purposefully develops specific PPP models and mechanisms of PPP project implementation. It confirms that the legal regulation of PPP is a necessary and sufficient condition for PPP development.

#### *4.3.2 PPP units*

In **France** the PPP centre (Mission d'Appui aux PPP [MAPPP]) was established in 2005. The main aim of MAPPP was to assist the executive public authorities (initiators of PPP projects), including preparing and implementing PPP projects all over France. MAPPP was a structural unit of the Ministry of Finance, with a strength of six staff. All MAPPP's decisions were subject to the approval of the Ministry of Finance (Saussier & Tran, 2012).

In 2016, MAPPP was reorganised into the PPP Support Service (FIN INFRA). It was done due to changes in national legislation. Nowadays, the centre continues to be a division of the French Ministry of Finance. The main task of FIN INFRA is to provide advice and methodological assistance to the authorities at all stages of PPP projects. In particular, the centre performs the initial review, analysis, and approval of procurement documentation developed by authorities – initiators of PPP projects. At the municipal level, PPP projects may be implemented without their evaluation by the centre. FIN INFRA also advises the executive authorities to develop the legal and financial models of PPP projects. The utility activities are financed exclusively from the state budget. Accordingly, FIN INFRA is not entitled to receive remuneration from other ministries and agencies. Unfortunately, there are not enough public data concerning the effectiveness of PPP project implementation in France. Only one source of information (European Court of Auditors, 2018) is available. The team of auditors analysed four PPP projects in France. They noted one of the projects had a cost overrun of 73%, and another project had a delay of 16 months. The

annual number of PPP projects began to increase actively from 2006 (Table 4), i.e., one year after the MAPPP appeared. Apparently, MAPPP has made a significant contribution to the development of the national PPP market.

**Table 4:** Annual Number of PPP Projects in France

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
<b>Number of projects</b>	2	0	1	1	1	3	10	10	19	13	16

Source: EPEC, 2020.

In **Germany**, there are PPP units at both federal and regional levels. The Federal PPP unit is called PPP Germany Ltd (Schäfer & Rethmann, 2020). In 2001, Germany’s government established a PPP Steering Committee to manage PPP policy. At the same time, the federal state of North-Rhine Westphalia created the first regional PPP unit, the ‘PPP Task Force NRW’. From 2001 to 2005, similar PPP units were set up in all German states. The federal PPP centre was established in November 2008 by the German Ministry of Finance as a joint-stock company. It was called ÖPP Deutschland AG (PPP Germany). The shareholders of ÖPP Deutschland AG were both federal and regional public authorities and private companies (including construction companies, banks, consultants, and industry unions) (Müller, 2009).

In January 2017, this company was transformed into PPP Germany Ltd. Only representatives of the public sector (both federal, regional, and municipal) remained as founders. The authorities also expanded the objectives of the PPP unit. ÖPP Deutschland AG advised both the public and private sectors on structuring PPP projects. The restructured company now assists in organising all types of public procurement infrastructure projects (including PPP projects) only to public authorities at all levels. The executive authorities, being its founders, can engage this company as a consultant without competitive procedures (Schäfer & Rethmann, 2020).

The annual growth of PPP projects began the following year after the appearance of the PPP centre (Table 5). Consequently, it can be assumed that the centre’s contribution to this growth is significant. Also, it should be noted that the interconnection mostly repeats the case of France.

**Table 5:** Annual Number of PPP Projects in Germany

Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Number of projects	0	8	4	3	6	6	23	11	13	6	10	7

Source: EPEC, 2020.

In **Russia**, the Economic Sector Development Department of the Ministry of Economic Development has been responsible for PPP development tasks at the federal level since 2006. It mainly analyses the national PPP market and prepares proposals for the improvement of PPP methodology and legislation.

At the regional and municipal levels, PPP development functions are assigned on a case-by-case basis. Typically, at the regional level, PPP is a part of the Ministry of Economic Development or the agency. They are responsible for attracting investment to the region. At the level of municipalities, PPP issues are the responsibility of the financial and economic units (departments, divisions, etc.) of the municipality. At all three public levels, the PPP units have a purely advisory function. The procurement procedures of PPP are the responsibility of the relevant ministries.

Also, the PPP information and advisory functions are performed by an autonomous non-profit organisation “National PPP Centre”, founded by the national development bank “Web.RF” in 2009. This PPP centre, in particular, provides paid advisory services on structuring PPP projects to both private investors and executive authorities at all public levels. Besides, it publishes the annual ranking of the Russian regions by the level of PPP development. In Russia, the annual growth of the number of PPP projects has begun since 2009 (Table 6). It coincides with the year of the creation of the PPP centre.

**Table 6:** Annual Number of PPP Projects in Russia

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Number of projects	0	0	0	13	84	86	95	102	204	403	821	487	451	376

Source: Ministry for Economic Development of Russian Federation, 2020.



It is taken into consideration that the dynamics of the PPP market are influenced by many micro and macroeconomic factors (including the phases of economic growth in the country and the world). In this regard, the presented hypothesis about the influence of the PPP centre on the growing number of PPP projects probably requires additional mathematical validation. It will be the subject of further research.

Thus, the existence of PPP development organisations in a country is a common global practice. There are significant differences in the organizational structure and the set of performing functions. As a good practice, it should be concluded that the national PPP centres/units can be established as part of the government (like in France) or as legal entities involving public and private companies (like in Germany and Russia).

The legal regulation and the first PPP projects appeared in the reviewed countries earlier than the creation of the national PPP units. Therefore, the national PPP markets were able to develop for a certain period without any PPP units. But the appearance of the PPP unit has stimulated the development of a national PPP market in every reviewed country. Thus, the existence of a PPP unit is a sufficient condition for PPP development at the national level.

#### *4.3.3 State policy in PPP*

The methods of the public policy analyses may be different. They include “art, craft, and persuasion” (Dunn, 2017). To conduct the PPP policy analysis, the method of inductive reasoning (Copi, et al., 2006) was used. The above-mentioned experience of three countries was used to identify some stages of the evaluation of their PPP state policy (Table 7).

**Table 7:** Evolution Stages of PPP State Policy in France, Germany, and Russia

<b>Time period</b>	<b>Objectives of PPP public policy</b>	<b>Implementation of PPP public policy</b>	<b>Outcomes &amp; outputs of PPP public policy</b>
<b>France</b>			
From the Roman Empire to 1988	To develop infrastructure objects through private investments	Based on the legal regulation of the concession agreements	A lot of railways, metros, water and power stations were built - A rich experience of concessions was accumulated (including skills of civil servants and jurisprudence)
1988 – 2019	To diversify the range of PPP models and to improve the quality of PPP projects implementation	- The new models of PPP (including payment mechanisms) were legislated - VfM criteria became obligable for initiating PPP projects - The PPP centre was established	- Rapid growth in the number of PPP projects. The number of unsuccessful projects grew too - The PPP centre accumulated experience of PPP and improved the skills of civil servants in PPP
2019 - now	To improve the effectiveness of PPP projects and to involve more SMEs in new PPP projects	- The uniform legal act (the PPP Code) has been legislated - PPP projects have implemented following strategic plans for social and economic development	France has the most active PPP market* in terms of the number of projects (EPEC, 2020) *- among other European countries

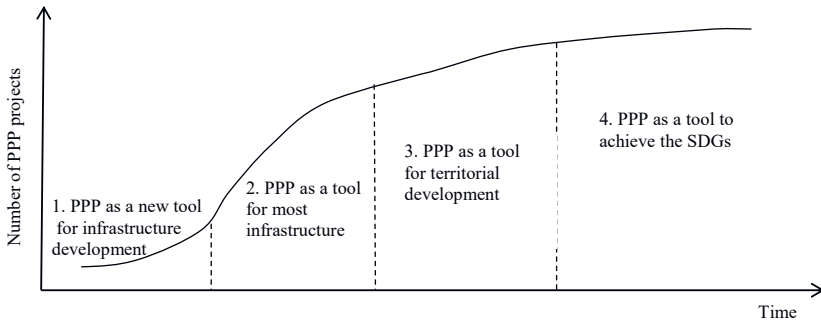
Time period	Objectives of PPP public policy	Implementation of PPP public policy	Outcomes & outputs of PPP public policy
<b>Germany</b>			
From the Middle Ages to 2001	To develop infrastructure objects by private investments	The concession model was a single PPP approach. It was based on the civil code.	- A lot of roads were built - A rich experience of concessions was accumulated (including skills of civil servants and jurisprudence)
2001 – 2005	To diversify the range of PPP models (according to the UK’s experience) and to improve the quality of PPP projects implementation	<ul style="list-style-type: none"> <li>- The PPP acceleration act came into force</li> <li>- VfM criteria became obligable for initiating PPP projects</li> <li>- The special federal committee for PPP was established</li> <li>- The first regional PPP Unit ‘PPP Task Force NRW’</li> </ul>	<ul style="list-style-type: none"> <li>- Rapid growth of the number of PPP projects</li> <li>- The federal and regional PPP units accumulated an experience of PPP and improved the skills of civil servants in PPP</li> <li>- The national PPP market became highly competitive with international players</li> </ul>
2005 – now	To improve the effectiveness of PPP projects	<ul style="list-style-type: none"> <li>- The federal PPP centre has been established</li> <li>- PPP projects have been implemented following strategic plans for social and economic development</li> </ul>	<p>Germany has the most active PPP market* in value terms (EPEC, 2020)</p> <p>*- among other European countries</p>

Time period	Objectives of PPP public policy	Implementation of PPP public policy	Outcomes & outputs of PPP public policy
<b>Russia</b>			
From 2006 till 2016	To develop infrastructure objects by private investments based on the PPP experience of developed countries	<ul style="list-style-type: none"> <li>- Based on the legal regulation of the concession agreements</li> <li>- The special federal department for PPP and the National PPP Centre were established</li> </ul>	<ul style="list-style-type: none"> <li>- Rapid growth of the number of PPP projects</li> <li>- The federal and regional authorities accumulated experience of PPP to improve the legislation</li> </ul>
2016 – now	To diversify the range of PPP models (according to the experience of developed countries) and to improve the quality of PPP projects implementation	<ul style="list-style-type: none"> <li>- Based on the new federal law on PPP agreements and constant updating of concession legislation</li> <li>- VfM criteria has become obligable for initiating PPP project*</li> <li>- PPP projects have been implemented following strategic plans for social and economic development</li> </ul>	<ul style="list-style-type: none"> <li>- The opportunity to use all range of PPP models</li> <li>- The total value of the national PPP market was US\$59.7 billion in 2019</li> </ul>
		* - for concessions it is not applicable	

Source: Author.

Table 7 shows that PPP state policy goes through very similar stages in each reviewed country. The existence of only two stages in Russia is caused by the government’s ability to take into account the experience of developed countries. It has minimised the timeline for PPP development. Based on Table 7 four main stages in the evolution of PPP policy could be distinguished (Figure 2). So, it is justifiable to assume that these stages are universal and characteristic features of all developed and developing countries using PPP.

**Figure 2:** Evolutionary Stages in the Development of Public Policy in PPP



Source: Author.

**Stage 1, “PPP as a new tool for infrastructure development”.** The government policy starts to encourage private investments in infrastructure projects. At the same time, the state begins to form a legal PPP framework and establish relevant development institutions at the national/regional level. In this period, the authorities implemented one-off PPP projects. At this stage, the main focus of public PPP policy is to create conditions and accumulate practical experience for further up-scaling and to increase the efficiency of PPP projects. As a result of this stage, both authorities and private investors gained sufficient experience in implementing PPP projects, and the regulatory PPP framework and PPP units are established and functioning.

**Stage 2, “PPP as a tool for most projects”.** Public servants begin to believe in the absolute and unconditional efficiency of PPP. As a result, they start to use PPP to the maximum extent. Also, at this stage, a specific “fashion” for PPP use may have appeared. It is spurred, among other things, by media reports on the emergence of a new “panacea” for all infrastructure problems. This trend leads public officials to use PPP totally in all projects (without reference to strategic development documents). Often a PPP project is implemented just to show that PPP tools are actively used. At the same time, the importance of the infrastructure project for socio-economic development is not considered to a greater extent. As a result, a certain number of failed (with term delay and/or cost overrun) PPP projects have appeared.

**Stage 3, “PPP as a tool for territorial development”.** Unsuccessful PPP projects lead authorities to rethink the PPP policy. Firstly, the criteria for justification and decision-making on PPP choice appear as a part of legal regulation. For instance, the VfM approach. Further, the feasibility of PPP project implementation begins with an analysis of the territory’s strategic development objectives.

**Stage 4: “PPP as a tool to achieve the SDGs”.** The further evolution of PPP policy leads to a further transformation of the understanding of PPP. The authorities begin to evaluate the feasibility and effectiveness of PPP projects through the Value for People (VfP) approach. It is inextricably linked to the Sustainable Development Goals (SDGs), i.e., PPP comes to be seen as one of the tools to achieve the SDGs. It is essential to note that the “Guiding Principles on People-first Public-Private Partnerships in support of the United Nations Sustainable Development Goals” were approved at the 4th UNECE International PPP Forum (United Nations Economic Commission for Europe, 2019). Naturally, it establishes the base for the continued use of PPP as people first PPPs (PFPPPs).

It is possible to conclude that France and Germany are currently in transition from the 3rd to the 4th stage of the PPP policy evolution. As for Russia, according to Federal Law No. 224-FZ “On Public-Private Partnerships”, a PPP project must be in line with the national programmes for socio-economic development. It is the first step towards using a VfP approach. Thus, the country will be ready to move to the 4th stage soon.

## **5. Conclusions and Discussion**

In recent years, the regulatory and institutional PPP framework has continued to be one of the main drivers for the development of the national PPP markets. This conclusion is based on the case study analysis of such PPP-successful countries, France, Germany, and Russia. This finding fully approved the study hypothesis and several early studies (dated from 2010-2017) that were considered in the literature review.

The study has argued that the regulatory and institutional PPP framework consists of three core elements. They are the legal regulation of PPP, units for PPP development, and state policy in PPP. As it was described in the literature review, a lot of researchers have already identified different institutional factors that stimulate the development of the national PPP

markets. However, insufficient attempts have been made in those studies to identify the mutual influence of these factors. The research has tried to fill this gap. Based on the questionnaire survey, the following logical interrelationship was identified. PPP state policy and legal regulation of PPP are simultaneously necessary and sufficient conditions for PPP development at a national level. They fully determine the third core element (PPP unit). The last one is a sufficient condition for PPP development. This understanding could be essential to creating strategic action plans for the development of the national PPP markets. Hence, it is advisable to form detailed PPP state policy and appropriate legal regulations. And to create the relevant units only after it.

The case study of the countries allowed us to identify the following good practices:

- All analysed countries frequently implement the BTO model. In particular, this allows them to mitigate the risks of asset loss for the public party.
- The national PPP units can be established equally as part of authority (like in France) or as legal entities involving public and private companies (like in Germany and Russia). In any case, the existence of the national PPP unit stimulates the development of the PPP market.
- The French experience of unifying national PPP legislation increases the involvement of small and medium-sized businesses in PPP projects through clearer and more transparent procedures.
- The Russian law “On PPPs” sets up the VfP indicator as a critical evaluation criterion for PPP projects, i.e., the PPP project objectives must comply with at least two purposes of the strategic documents for socio-economic development.

Based on the literature review, the research has concluded that most of the studies for identifying the best practices in PPP development are conducted by the institutions for development (UN, the World Bank, etc.). However, these publications are not peer-reviewed. Besides, the study has identified some best practices that have not been found in the previous studies.

The proposed stages of the PPP policy evolution proved that there are historical regularities of the PPP state policy. It seems to suggest that these stages are universal and characteristic features of all developed

and developing countries using PPP. Similar historical models of PPP development are lacking in the literature.

Executive authorities, both at federal and regional levels, can use the study's main provisions and conclusions to further improve the regulatory and institutional framework for PPP development, especially in emerging markets. Developing countries can utilise the concept of the evolutionary stages of PPP public policy for a faster transition to more mature stages.

The main limitation of the study is that it is based only on the experience of three countries and the answers of 69 respondents. To improve the validity of the findings, future studies ought to conduct a relevant case study analysis of the countries from other regions of the world, for instance, East Asia and the Pacific, Latin America and the Caribbean, etc.. Besides, the study mainly used qualitative data. Hence, future research may be grounded on quantitative analyses of the quality of PPP policy and the effectiveness of PPP project implementation.

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## References

- Abdul-Aziz, A.-R. (2006). Privatisation of fixed-rail transit systems: A case study of Malaysia's STAR and PUTRA. *Canadian Journal of Civil Engineering*, 33, 846-853. DOI: 10.1139/106-030.
- Akintoye, A., Beck, M., & Hardcastle, C. (2003). *Public-Private Partnerships: Management Risks and Opportunities*. London: Wiley.
- Aulich, C. (2010). Putting "partnership" into PPPs: An Australian perspective. *Institutions and Economies*, 2(1), 1-16.
- Boardman, A.E., Greve, C., & Hodge, G.A. (2015). Comparative analyses of infrastructure public-private partnerships. *Journal of Comparative Policy Analysis: Research and Practice*, 17(5), 441-447. DOI: 10.1080/13876988.2015.1052611.
- Bonhage, J. (2020). The Public-Private Partnership Law Review: Germany. Retrieved from: <https://thelawreviews.co.uk/title/the-public-private-partnership-law-review/germany> (accessed 10 June 2021).



- Burger, P., Tyson, J., Karpowicz, I., & Coelho, M.D. (2009). The effects of the financial crisis on public–private partnerships. IMF Working Paper, No. 09-144, International Monetary Fund. DOI: 10.2139/ssrn.1475389.
- Chan, A.P.C., Lam, P.T.I., Chan D.W.M., Cheung, E., & Ke, Y. (2010). Critical success factors for PPPs in infrastructure developments: Chinese perspective. *Journal of Construction Engineering and Management*, 136(5), 484-494. DOI: 10.1061/(ASCE)CO.1943-7862.0000152.
- Chou, J.-S., Tserng, H.P., Lin, C., & Huang, W-H. (2015). Strategic governance for modeling institutional framework of public–private partnerships. *Cities*, 42 Part B, 204-211. DOI: 10.1016/j.cities.2014.07.003.
- Copi, I.M., Cohen, C., & Flage, D.E. (2006). *Essentials of Logic* (2nd ed.). Upper Saddle River, NJ: Pearson Education.
- Delmon, J. (2010). *Private Sector Investment in Infrastructure: Project Finance, PPP Projects and Risk*. World Bank and Kluwer Law International: Netherlands.
- Dunn, W.N. (2017). *Public Policy Analysis: An Integrated Approach* (6th ed.). Routledge. DOI: 10.4324/9781315181226.
- Emek U. (2015). Turkish experience with public private partnerships in infrastructure: opportunities and challenges. *Utilities Policy*, 37, 120-129. DOI: 10.1016/j.jup.2015.06.005.
- Engel, E.M.R.A., Fischer, R.D., & Galetovic A. (2010). The economics of infrastructure finance: public-private partnerships versus public provision. *EIB Papers*, 15(1), 40–69.
- European PPP Expertise Centre (EPEC). (2012). France. PPP Units and Related Institutional Framework. Retrieved from: <https://www.eib.org/en/publications/epec-france-ppp-unit-and-related-institutional-framework> (accessed 10 June 2021).
- European PPP Expertise Centre (EPEC). (2020). Market Update. Review of the European PPP Market in 2020. Retrieved from: <https://www.eib.org/en/publications/epec-market-update-2020#> (accessed 29 January 2022).
- Farquharson, E., C. Torres de Mästle, C., Yescombe, E.R., & Encinas, J. (2011). How to Engage with the Private Sector in Public-Private Partnerships in Emerging Markets. The International Bank for Reconstruction and Development, The World Bank. Retrieved from: <https://ppiaf.org/documents/16> (accessed 10 June 2021).

- Heldeweg, M., & Sanders, M. (2013). Good legal governance in authoritative public–private partnerships: Conceptualising legitimate partnerships with public authority. *European procurement and public–private partnership. Law Review*, 8(2), 175–185. Retrieved from: <https://www.jstor.org/stable/26693953> (accessed 10 June 2021).
- Hwang, B.-G., Zhao, X., & M.J.S. (2013). Gay public private partnership projects in Singapore: Factors, critical risks and preferred risk allocation from the perspective of contractors. *International Journal of Project Management*, 31, 424-433. DOI: 10.1016/j.ijproman.2012.08.003.
- International Bank for Reconstruction and Development (IBRD). (2017). Procuring Infrastructure Public-Private Partnerships. Report 2017. Retrieved from: <https://ppp.worldbank.org/public-private-partnership/library/procuring-infrastructure-ppps-2017> (accessed 10 June 2021).
- Khoteeva, M., & Khoteeva D. (2017). Public-private partnerships: a solution for infrastructure development in the UK? Case study of the London underground public-private partnership project. *International Review of Management and Marketing*, 7(1), 300-308.
- Kwak, Y.H., Chih, Y., & Ibbs, CW. (2009). Towards a comprehensive understanding of public private partnerships for infrastructure development. *California Management Review*, 51(2), 51–78.
- Ministry for Economic Development of Russian Federation. (2020). On the development of PPPs in the Russian Federation: information and analysis review. Retrieved from: <https://www.economy.gov.ru/material/file/6b5f12f3140cf044f1f715d18dfdef0a/gchp%2021.02.2020.pdf.pdf> (accessed 10 June 2021) [in Russian].
- Müller B. (2009). The development of a national PPP unit: The German experience. Regional Conference on Concessions and Public-Private Partnerships. Retrieved from: <http://www.sigmaweb.org/publicationsdocuments/44406329.pdf> (accessed 10 June 2021).
- Organisation for Economic Co-operation and Development (OECD). (2012). Recommendation on principles for public governance of public-private partnerships. Retrieved from: <https://www.oecd.org/governance/oecd-recommendation-public-privatepartnerships.htm> (accessed 10 June 2021).
- Projektdatenbank. (2021) Database of the German PPP projects. Retrieved from: <https://www.ppp-projektdatenbank.de> (accessed 10 June 2021).
- Rosinfra. (2021). Database of the Russian PPP projects. Retrieved from: <https://www.rosinfra.ru/project> (accessed 10 June 2021).

- Saussier, S., & Tran, P.T. (2012). The efficiency of public-private partnerships in France: An initial quantitative evaluation. *Revue d'économie Industrielle*, 140(4), 81-110. DOI: 10.4000/rei.5480.
- Schäfer, M., & Rethmann, L. (2020). Öffentlich-Private Daseinsvorsorge (ÖPD) und Öffentlich-Private Partnerschaften (ÖPP): Gemeinsamkeiten und grundlegende Unterschiede. In: Öffentlich-Private Daseinsvorsorge (ÖPD) in Deutschland. Essentials. Springer Gabler, Wiesbaden. DOI: 10.1007/978-3-658-31100-1\_2.
- Singaravelloo, K. (2010). PPP: The right marriage between local government and the private sector in Malaysia? *Institutions and Economies*, 2(2), 142-166.
- Sundaram, J.K., & Chowdhury A. (2009). Reconsidering public-private partnerships in developing countries. *Institutions and Economies*, 1(2), 191-205.
- Tranfield, D., Denyer, D., & Smart, P. (2003). Towards a methodology for developing evidence-informed management knowledge by means of systematic review. *British Journal of Management*, 14(3), 207–222. DOI: 10.1111/1467-8551.00375.
- United Nations Economic Commission for Europe. (2019). Guiding principles on people-first public-private partnerships in support of the United Nations Sustainable Development Goals. Retrieved from: [http://staging2.unece.org.net4all.ch/fileadmin/DAM/ceci/ppp/Standards/ECE\\_CECI\\_2019\\_05-en.pdf](http://staging2.unece.org.net4all.ch/fileadmin/DAM/ceci/ppp/Standards/ECE_CECI_2019_05-en.pdf) (accessed 10 June 2021).
- Vaissier, F.-G., Laisney, L.-J., & Bars, L.O. (2020). The Public-Private Partnership Law Review: France. Retrieved from: <https://thelawreviews.co.uk/title/the-public-private-partnership-law-review/france> (accessed 10 June 2021).
- Verhoest, K., Petersen, O., Scherrer, W., & Soeipto, R.M. (2015). How do governments support the development of public private partnerships? Measuring and comparing PPP governmental support in 20 European countries. *Transport Reviews*, 35(2), 118-139. DOI: 10.1080/01441647.2014.993746.
- Verweij, S., & Meerkerk I. (2020). Do public–private partnerships achieve better time and cost performance than regular contracts? *Public Money & Management*, 41(4), 286-295. DOI: 10.1080/09540962.2020.1752011.
- Wang, N., Ma, M., & Liu Y. (2020). The whole lifecycle management efficiency of the public sector in PPP infrastructure projects.

- Sustainability*, 12(7), 3049. DOI: 10.3390/su12073049.
- Yescombe, E.R. (2007). *Public–Private Partnerships: Principles for Policy and Finance*. Butterworth-Heinemann.
- Zhang, X. (2005). Critical success factors for public–private partnerships in infrastructure development. *Journal of Construction Engineering and Management*, 131(1), 3-14. DOI:10.1061/(ASCE)0733-9364(2005)131:1(3).
- Zhang, S., Gao, Y., Feng, Z., & Sun W. (2015). PPP application in infrastructure development in China: institutional analysis and implications. *International Journal of Project Management*, 33(3), 497-509. DOI: 10.1016/j.ijproman.2014.06.006.
- Zhao, Z.-Y., Zuo, J., Zillante, G., & Wang, X.-W. (2010). Critical success factors for BOT electric power projects in China: Thermal power versus wind power. *Renewable Energy*, 35, 1283-1291.