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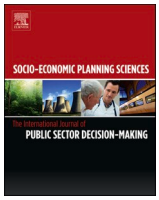

Unravelling the influence of formal and informal institutions on the duration of public concessions

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ABSTRACT

The growing prominence of public–private partnerships featuring concessions has become a focal point in the management realm. Concession agreements, often spanning numerous years, imbue projects with continuity and stability. Through the theory of neo-institutionalism, we analyse the influence of formal and informal institutions on the duration of these projects across diverse countries, showing the pivotal role played by the institutional environment and consensus mechanisms in ensuring the success of such collaborative endeavours. The findings furnish valuable insights for practitioners and policymakers by facilitating the identification of optimal conditions to establish enduring and highly effective concession agreements.

1. Introduction

The study of alliances and cooperation agreements has been the focus of academics in strategic management in recent decades [1–3]. Cooperation between firms creates mutual benefits since it allows the acquisition of different resources and capacities, thereby configuring a positive sum game [1,4].

The interest in analysing the duration of cooperation agreements is twofold. First, because the longer duration of the agreements is associated with greater value creation [5]; and second, because most of these agreements do not prosper, as shown by the fact that they do not reach their expected maturity [4,6].

The characteristics of the environment and the capacity of the companies engaged in the agreement to adapt to environmental changes constitute key drivers for the success of the agreement [1,7,8]. In particular, the institutional environment where the agreement occurs is presumed to be a determinant of its duration since the legal nature of the agreement requires institutional stability for proper performance. A favourable environment reduces the transaction costs, making it easier to enforce the contract [8]. At the same time, organisations that form partnerships need to respond to possible changes in the environment, and the way in which they make decisions to adapt can influence the success of their choices [9,10].

Scholars note that the research on cooperation is not prolific in terms of analysing the duration of cooperation [1], especially empirically [11]. Moreover, some works exclusively consider companies in the technology sector [2,4], with agreements solely between private firms [6], using few observations [2] or without modelling the nested data of each country where the agreements are performed [12]. Consequently, there is a limitation in the study and application of agreements to other organisational forms, in different sectors and in a more refined way, which hinders the knowledge and understanding of the mechanisms of a cooperation agreement.

In this context, public–private partnerships (PPPs) are contractual arrangements between government authorities and private entities to jointly undertake infrastructure or service projects [13]. The study of the duration of PPPs is of great interest due to their worldwide proliferation, which results from their ability to reduce transaction costs [14], act as a formula that promotes innovation [15] and create higher value thanks to their longevity [16]. In addition, public–private agreements usually entail a large volume of investments in different countries and sectors [17], especially in specific assets, such as specialised infrastructures and technologies [18]. Furthermore, PPPs constitute a hybrid governance form between the company–market dichotomy, which challenges the traditional boundaries of the firms [19] and is sensitive to institutional changes and agents' decisions— there must be a process to respond to changes in PPPs [1]. In the first instance, it is the government that promotes the adoption of partnerships, establishes the contract between

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the partners, designs the regulatory framework in which the PPPs operate and is the actor that proposes and implements institutional changes over time [19,20]. However, once the agreement's conditions are established, any formal institutional change that affects its development may consider its underlying social environment; for example, how the private agents adapt to changes as well as their consideration towards the public party [20,21]. Specifically, in locations with a high level of consensus, the parties involved are more inclined to commit to a contract of longer duration, as they perceive less risk that significant disruptions or disputes will arise and affect the viability of the project. Consensus building is pivotal to the success of concession projects, and it influences various stages of a project's lifecycle. Prior to granting concessions, consensus among stakeholders is vital. This involves aligning the views of government officials, private investors, community representatives and other relevant parties on the necessity, scope, objectives and potential benefits of the project. Through consensus-building efforts, stakeholders synchronise their interests, enhancing collective support for the project.

Consensus building remains essential throughout the implementation phase. Stakeholders must address emerging challenges, resolve conflicts of interest and ensure project continuity. Regular communication, stakeholder engagement and problem-solving mechanisms foster consensus during this phase, ensuring project progression and goal attainment. A high level of consensus in the decision-making phase demonstrates a strong interest from the parties involved in the project, diminishing the significance of the implementation phase to mere technical adjustment issues [22].

Consensus remains important until project completion and beyond. Throughout the concession period, stakeholders collaborate to address operational issues, adapt to changing circumstances and adhere to contractual terms. Consensus-building efforts bolster the project's long-term success by nurturing cooperation, trust and accountability among all parties.

For these reasons, there is an interest in the institutional environment and the organisational mechanisms of public–private agreements to manage uncertainties related to the agreements through the decision making of the parties as well as an interest in analysing relationships. Numerous studies have explored the determinants of PPP performance in terms of successful completion, examining factors such as project financing [23], risk allocation [19,24], stakeholder engagement [25], corruption [26], policy risk [27] and contractual arrangements [21]. These investigations have provided valuable insights into the factors influencing the performance of PPP projects. But despite the extensive attention paid to these aspects, there is a lack of studies specifically addressing the temporal dimension of PPPs. The identification of features that are more suitable for transactions would allow the deployment of changes conducive to converging with those favourable to greater length agreements, creating higher value and wealthfare in society. This importance generates the following question as a research objective: ***How do formal and informal institutions influence the duration of public concessions?***

Thus, the paper analyses the impact of the institutional environment and cultural mechanisms in the decision-making process on the duration of 1873 public–private agreements in 36 developing economies between 1997 and 2017 by means of neo-institutionalism theory.

The structure of the article is as follows. The second section details the literature, which allows us to establish the nature of the PPPs and their institutional operational levels and the research hypotheses testing how the formal institutions and informal institutions as well as their interaction influence PPPs' duration. In the third section, the methods with the sample and variables are presented. In the fourth section, we present the results and test the hypotheses proposed using PPPs' World Bank Database experiences. Section five continues with the managerial relevance and discussion of the empirical evidence obtained. Finally, section six ends the article by presenting the main conclusions.

2. Theoretical framework and hypotheses

2.1. Theoretical foundations

Transaction costs theory (TCT) can help to understand the nature of PPPs by showing how PPPs emerge from the public sector's decision to outsource services or infrastructure provision to lower costs [20,28]. The theory emphasises the paradoxical nature of transactions in PPPs given that their high uncertainty, specificity and infrequency would typically recommend vertical integration within the public administration [29].

Agency theory provides a lens through which to understand the dynamics of PPPs by focusing on the principal–agent relationship between the government (principal) and the private sector (agent). In PPPs, the government delegates the provision of public services or infrastructure to private firms to achieve efficiency gains and cost savings. However, this delegation introduces agency problems, such as information asymmetry and conflicting interests, as the private sector may prioritise profit maximisation over public welfare. Agency theory suggests that contractual mechanisms, such as performance-based incentives and monitoring mechanisms, can mitigate these problems by aligning the interests of both parties and ensuring accountability [14,30]. Additionally, the literature emphasises the importance of regulatory frameworks and governance structures in reducing agency costs and optimising PPP outcomes [18,31].

Neo-institutionalism enriches TCT by emphasising how institutional pressures and norms influence the decision-making process surrounding PPPs [32]. Institutions shape actors' behaviours, guiding governments towards PPPs as a response to legitimacy concerns or institutionalised practices [20]. Additionally, the concept of institutional fit highlights the need for PPPs to align with prevailing institutional frameworks to ensure acceptance and support [33]. Similarly, neo-institutionalism complements the agency theory perspective by emphasising how institutional contexts influence the design and implementation of contractual mechanisms aimed at mitigating agency problems [18,31]. Regulatory frameworks and governance structures, often shaped by institutional pressures, play a vital role in reducing agency costs and optimising PPP performance [34].

2.2. The nature and underlying institutional levels of public–private partnerships

PPPs are agreements that regulate transactions between the parties, generally with the objective of making singular provisions of large volumes of investment and that entail a long duration [13,35]. TCT can explain the nature of these collaborations since they emerge from the public part that outsources the service/infrastructure instead of internalizing and executing it because costs would be lower if carried out by a private operator [20,28]. In this context, the main Williamsonian unit of analysis—the transaction—is, at first sight, revealed as paradoxical given the high uncertainty, specificity and infrequency of this type of provision, which would precisely recommend its vertical integration within the administration [29]. This apparent contradiction motivates a direct counterfactual question: If the costs of the nature of the transaction were so high when going to the market, then why do these collaborations exist? One of the possible answers is the need to broaden the focus to factors other than the nature of the transaction that can mitigate the costs of going to the markets, such as the governance structure of the transaction [36] and its contractual conditions that allow minimisation of costs [8,37].

Within these collaborations, there are organisational forms that are situated between this firm–market dichotomy with a clearly differentiating aspect. Specifically, there are types of partnerships in which the private operator is not limited only to the provision of the construction of the on-demand service for its delivery in the shortest possible time, but rather invests in specific assets and operates the facility at its own

risk (i.e., agreements of the type build–operate–transfer; build–own–operate; merchant), whereby a temporary transfer of ownership to the private operator is established for a certain duration agreed upon between both parties [13,35].

This temporary transfer of ownership to the private party is a non-trivial matter for two reasons. First, it allows a competitive dialogue to be established between the principal and the agent, since the latter reveals its real preferences and capabilities, reducing adverse selection—agents apply not only to build but also to provide the service—and moral hazard —the parties will extract the income from the investment made previously—[38]. In this way, classic problems can be mitigated, such as monitoring and underinvestment by a private operator that does not later use its assets [30]. Second, the greater bargaining power of the public party due to residual control of the property rights is lessened by the temporary transfer of ownership of the asset to the agent [39,40]. Given the stated reasons, Grossman and Hart's property assignments make it possible to avoid the Williamsonian canonical vertical integration by the public part as well as to reduce the problems of retention and of obtaining quasi-marginal income from the asset by the private party in the event of renegotiation, thus stimulating the alignment of the principal–agent interests of Jensen and Meckling that favour prior investments.

The governance structure of the collaboration may favour a more stable durational relationship depending on the environment in which the transaction takes place (see Fig. 1). One of these environments is that of formal institutions; since the public part is one of the forerunners of the initiative, it can indicate its interest in this type of figure in the long term [19], clearly detail the rules of the game that defend the property rights of the private investor [41] and guarantee an equitable resolution in case of conflict in the face of long-term incomplete contracts [42]. In turn, when the commitment of the institutions to these figures is greater, they may have agreements with other international institutions that facilitate financing to the private investor, which serves as a signal, indicating their confidence and support to the economic agents in the market [43], improving prior selection of private agents as well as selection during and after performance [44].

Likewise, the institutional environment operates within a broader framework, that of informal institutions such as customs, traditions, or social norms [45]. This type of institution changes much more slowly and precedes the formal ones [46]. Once the social environment is rooted, its persistence mechanism arises from resistance to change due to the costs involved, specific groups favoured by the current situation and moral acceptance or customs of society [32]. Consequently, there is a societal reluctance to change because regulations emerge from social conventions and their repetition over time [48]. Should changes occur that may alter the informal institutions, they can be interrelated with other social norms so that there is difficulty in altering the *status quo* [49]. Even when changes happen, they can be done in the same direction as the previous social stage [33] or even superficially be produced, provoking a '*gatopardised*' situation [50]. Thus, organisational units within national boundaries would self-reproduce in environments that are subject to gradual changes that facilitate their reproduction [51].

We can see this joint approach in Fig. 1, in which the analysis of the duration as a transaction adjustment within an organisational structure that operates at a higher level can be analysed through the formal institutional context in which it is embedded as well as informal institutions in which agents carry out the transaction. This allows unravelling of the mechanisms through which the duration of these collaborations adjusts to those formal and informal layers that the transaction underlies.

2.3. The influence of the formal institutions on the length of agreements

TCT can explain the nature of collaborations [1] since the public part establishes cooperation with the private one when the cost of carrying out an activity is less than completely internalizing it [19,52].

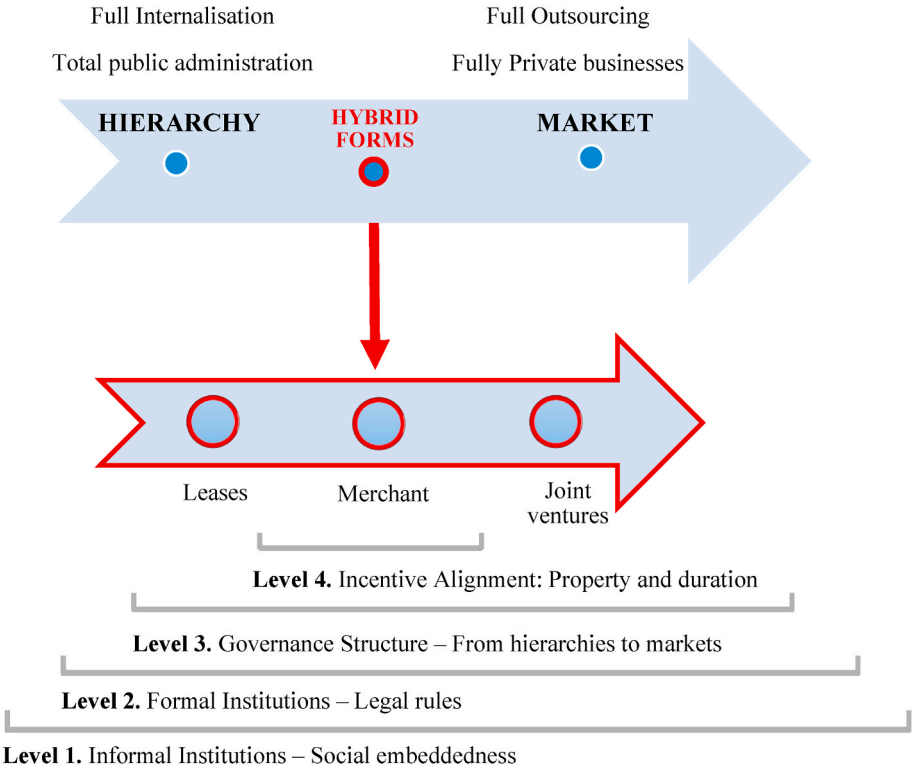

Fig. 1. Nature and institutional levels where public–private partnerships operate.
Source: Own elaboration adapted from Williamson [45,46] and Soecipto and Verhoest [47].

Transaction costs may vary depending on the nature of the economic activity [29,31], the behaviour of the agents [53] and the environmental conditions in which the economic agents perform the activity [8]. The parties establish the conditions of the collaboration that facilitate the governance of the transaction concerning its characteristics [29,31], the behaviour expected by the partners and the uncertainty to which they will be subjected during a time horizon, all in an environment of bounded rationality [20].

If there were no bounded rationality [54], the agents could know the opportunistic behaviour and changes in the environment [29,31] and establish optimal contracts in the longer term or a hypothetical *never-ending* scenario for the public party to guarantee the economic activity, thereby reducing costs associated with contingencies [8]. However, both the bounded rationality and the incompleteness of the contract limit the establishment of a longer duration to face the uncertainty since the parties to the agreement can be held up [28,47] with a high magnitude due to the quasi-rents generated by highly specific assets [20]. For this reason, the duration of the agreements—determined by the parties—is revealed as an adjustment factor between all elements that are part of the transaction [7,8,11].

One of the sources that can generate uncertainty in establishing long durations is the institutional framework [19,20]. The institutions are formed by elements that consist of the formal rules shaped by the legal frameworks and the informal constraints, such as customs or traditions [32,34]. It is desirable for the institutions to have stability and quality to reduce the uncertainty of operating in markets [55,56] and improve the forecast and organisation of economic activities, which leads to a greater chance that companies will succeed [42,57].

In the case of PPPs, a favourable institutional environment can ensure that the public party as a partner maintains the tendency to use these figures through privatisation as well as the attitude of collaboration regarding projects in progress [19]. In addition, these partnerships tend to be projected for lengthy periods, with considerable amounts of money for high-specificity investments, so reverse policymaking can have affects to a greater extent [58].

For instance, the main institutional factor is the rule of law because it includes the acceptance of and respect for property rights, the capacity of the legal system to enforce contracts and judicial independence in the event of a conflict between the parties [41,42]. In PPPs, it guarantees the principle of *dura lex, sed lex*, implying that laws treat the public and private partners equally, both generally and in disputes that may appear in agreements in the face of unforeseen events [19,20,59]. Furthermore, the sources of risk identified in PPPs include situations such as the risk of expropriation or nationalisation of assets [60]. The government is one of the parties that carries out the public–private collaboration in PPPs, which thus creates a favourable environment that facilitates the attraction of private partners and the development of these agreements [42,61].

Poor institutions can also cause uncertainty in the markets, spreading it to the agents' expectations and generating other unfavourable economic conditions in the environment where the companies operate [19,20]. The PPP academic literature especially identifies these risks with unstable macroeconomic conditions, such as the volatility of inflation and interest rates [62] or poor market conditions [20]. Less stable environments have more incidences that may affect PPPs and, consequently, are more complex to translate into contracts, making them more difficult to perform, monitor, and enforce, compromising the agreement's survival [11,63].

Based on the arguments presented and referring to the institutional environment, the following hypothesis is established.

Hypothesis 1. (H1). The more favourable an institutional environment, the longer will be the duration of public–private agreements set out at the formation stage.

2.4. The influence of the consensus mechanisms on the length of agreements

In the field of public–private partnerships, stability and duration hold a distinct significance that differs from the dynamics observed in other forms of inter-firm alliances. While in some contexts, stability may not necessarily equate to success, in the case of PPPs, it represents a fundamental pillar of achievement. The enduring nature of PPPs within a country significantly contributes to its socioeconomic progress, serving as a cornerstone for sustained development and growth. Therefore, in this study, we aim to elucidate the positive correlation between the stability/duration of PPPs and the role of PPPs in driving socioeconomic advancement.

It follows from TCT [29,31] that the reason for establishing or continuing an agreement also depends on the costs generated by the internal organisation of the partnership. These costs may be due to the emergence of opportunistic behaviour among the partners due to conflicting interests during contract execution [1,20]. Thus, agency or principal-agent theory posits that in such agreements, the principal—the public party—sets objectives for the agent—the private party—that may diverge from those of the principal [64]. This situation can cause the collaboration to end prematurely if an agent's objectives and behaviour deviate significantly from the agreement or an agent acts dishonestly or fails [11,19].

The reality is that public–private agreements usually require a long term and, thus, a greater number of unexpected contingencies can arise that are difficult to mitigate due to the bounded rationality and incompleteness of the contracts [28]. Consequently, the occurrence of negative events can lead to a lack of coordination between agents and the realisation of shorter-term sequential agreements, along with difficulties in continuing those [21].

The decision–making mechanisms of the parties can mitigate or avoid the coordination problem. The decision–making problems of the parties are of two types, one of which is the capacity of the management teams to anticipate the returns of the projects, while the other is the lack of alignment of the individual and collective objectives [65].

There are cultural aspects that can work to achieve better decisions and to reduce the uncertainty related to the agency problem, facilitating the alignment of the interests of the agents and continuing the agreement [1,20]. For instance, the cultural tendency to reach large consensus (consensus mechanisms) among multiple agents in agreements can present greater stability [1,8]. Consensus mechanisms are a cooperative process by which the members of a group can generate and agree to support a decision representing the best interests of the whole [66]. This process does not assume everyone must be in complete agreement [67], but it makes it easier to contemplate the different perspectives of all the agents and to agree upon the resolution mechanism [68]. Consensus mechanisms seek broad participation in decision processes and increase discussion time [65] with the aim of reducing problems in the later stages of implementation where coordination is a fundamental element [69]. Expanding participation empowers participants by recognising that everyone is important, thereby enhancing their subsequent engagement [70].

Thus, decision making by consensus mechanisms generates a greater alignment between all the stakeholders of the organisations as compared to a unilateral decision, leading to greater group cohesion, lesser generation of conflicts during the process, greater support by the group of the decision made and stability [71]. A higher level of consensus in an organisation is also considered to bring out a greater number of alternatives and, therefore, is indicative that the decisions that are made are better than those with a smaller spectrum of choices [10,72].

The degree of consensus mechanisms embedded within an organisational structure is determined by the culture of the environment where this structure operates [73]. As a cultural dimension and informal institution, collectivism is defined as the degree of interdependence that society presents among all its members [74]. The collectivism's

dimension is polarised in whether the individual tends to perceive himself as an isolated unit, the 'I', or as part of a whole, the 'we'. In individual societies, people pay attention to themselves and their immediate family members [74]. Conversely, in collective societies, people perceive themselves as members of larger groups to which loyalty is owed [4] and tend to consider the whole when making decisions, facilitating the acceptance of the whole and its consideration in the face of unexpected events [75]. The individual culture leads to quick and little-debated decision mechanisms that push problems to later stages due to high self-confidence [76,77], while collectivism makes decisions by seeking consensus, especially in contexts of uncertainty and complexity [78].

In this way, collective environments are more conducive to establishing trusting relationships among the partners in PPP agreements, making it more likely that consensus mechanism decision making to manage the unforeseen issues that emerge during contract execution will set out longer relationships. Thus, we propose the following hypothesis.

Hypothesis 2. (H2). The higher the level of consensus mechanisms in decision making, the longer will be the duration of public–private agreements set out at the formation stage.

2.5. The influence of the interaction between consensus mechanisms and formal institutions on the agreement's length

Formal institutions also have an external form to improve their functions through their voice and accountability dimension [42]. Voice is an element of decision control, since different organisations participate in the election and legitimisation of governments [41]. In contrast, accountability provides the institutional system and its main actor (i.e., the government) with greater transparency in management, promoting competition and quality through public adjudication systems as well as generating greater security and commitment between the parties [19]. This institutional factor can be exercised by societies predisposed to it through consensus mechanisms [10,72]. This is not only because there is a greater option to exercise participation but also because this institutional aspect may be precisely due to collective societies that demand such consensus [71].

Together, the presence of these factors—formal institutions and consensus mechanisms—ensures that the decisions made by governments align with a market discipline that emerges from their society, aligning the needs and wishes of the population with the actions undertaken by governments [10,72]. The PPP academic literature identifies social acceptance of the project as one of the main keys to its successful development [79]. Consequently, the governments that formulate policies by standing firm in commitments provide environments where investors increase their confidence and investments, decrease their costs and improve their results [42]. This is the reason that risks related to the stability of the environments and the capability of the organisational forms to face them are identified in the relevant literature as affecting PPP success [21,58].

As indicated, the institutions and consensus mechanisms may have a positive and multiplicative effect on providing external stability—through institutions—and internal stability—through consensus mechanisms—regarding the uncertainties faced by partners in PPPs, leading to the following hypothesis.

Hypothesis 3. (H3). Better institutional environments and higher levels of consensus mechanisms in the decision-making process positively affect the duration of public–private agreements set out at the formation stage.

Thus, we can observe the three hypotheses in Fig. 2.

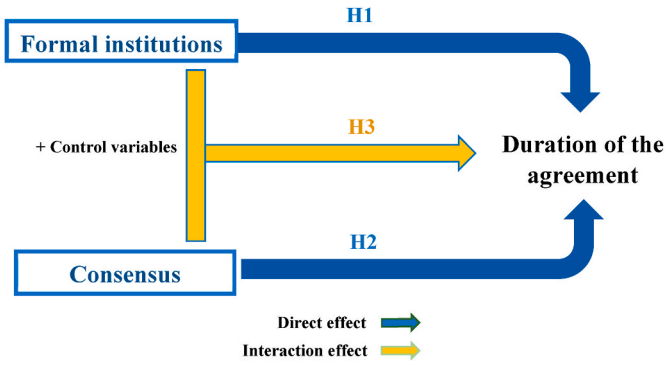

Fig. 2. Research hypotheses.

3. Methodology

3.1. Variables

Dependent variable. We used the duration of each project, taking the information from the Public–Private Infrastructure database of the World Bank (WBPD). Thus, the variable labelled as Duration takes values from 3 to 99 years in our sample. The contract length has been used in previous studies to analyse the duration of contracts [8,11,77] and, specifically, alliances [4]. At the time of starting the projects, the duration of the contract was agreed upon and set before the bidding process.

Independent variables. For the institutional environment, we used the six Governance Indicators of the World Bank (WGI) as a proxy [19,41,42]. Following Fleta-Asín & Muñoz [19], we analysed the average of the indicators. The variables were also individually analysed in the robustness section to know their separate effects (H1). Since the contract duration is set before PPP deployment, the value/s of the Institutions are lagged one year [19,80].

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Consensus mechanisms' was proxied by the collective cultural dimension of Hofstede et al. [74]. Since the original variable reflects the level of individualism from less to more in each country, in our sample from 11 to 78, the scale was reversed by multiplying it by minus one. In this way, higher values of the new 'consensus mechanisms' variable reflect greater collectivism in the project's location. The variable allowed H2 to be checked and were used to estimate the duration of alliances [4].

We built the interaction effect by multiplying the previous variables. Thus, we multiplied the consensus mechanisms and institutions for H3 (Consensus mechanisms x Institutions). To reduce potential multicollinearity problems, mean-centred variables were used in each interaction [81].

Control variables. As in previous papers, we included PPP controls from the World Bank Indicators [26,27,35,82]. Thus, the population growth in percentage terms (Population), the Gross Domestic Product per capita growth (GDP growth) and the log of the Gross Domestic Product in current US dollars (GDP) are included in the model. As we did with the institutional variables, we lagged the country control variables by one year [19,80]. To control the influence of other cultural factors, the rest of the classical dimensions of Hofstede et al. [74] were included: power distance, masculinity and aversion to uncertainty.

Following Jiang et al. [83], we controlled the regions where the projects were carried out, grouping and labelling them as Africa, Europe and Asia, respectively, reaching the value of one if the projects were in a particular location and zero otherwise. To avoid multicollinearity, we omitted America. We also omitted Oceania as a variable because it only had one observation in Fiji. Three variables were included to control the project's sectors, namely the transport, energy and water sectors, excluding the information and communication sector to avoid

multicollinearity [12,27,52]. These values reached one when the projects were carried out in a particular sector, and zero otherwise.

In addition, we included project control variables for each observation [20,26,27,83]. Thus, when the PPP shaped a Build–Operate–Transfer (BOT) or Merchant, the project was coded with 1, and 0 otherwise, because the governance structure of each project may influence the duration. Investment was the log of the total investment of the project since it can reflect the specificity of the investment [20]. The presence of local Sponsors, which could reduce the uncertainty when operating in local environments, was coded with 1 if they were in the project, or 0 otherwise. Finally, to control the period analysed, we divided the sample into three symmetric cohorts. Thus, time control variables were included through dummy variables according to periods 2004–2010 and 2011–2017 (Y04_10, Y11_17). The variables took the value of one when the project was conducted in those years, and zero otherwise. To avoid multicollinearity, the period 1997–2003 was omitted.

3.2. Model and estimation technique

We tested the hypotheses using regression analysis to find a significant impact on the response variable according to the set of independent variables. Since the dependent variable was a count variable in years, a Poisson regression was applied [4,84]. The data were also nested because some projects were carried out in the same country with their singularities [19,20]. Thus, instead of treating observations as a pooled sample with the same intercept, we allowed different intercepts per country [12]. The scores on the dependent variable for each individual project were predicted by the intercept that varied across groups. For these reasons, we applied a Poisson regression with multilevel mixed effects [84].

The complete specification model shown in linear format is as follows:

$$\begin{aligned}\text{Duration}_{i,j,t} = {} & \beta_0 + \beta_1 \text{Institutions}_{i,j,t-1} + \beta_2 \text{Consensus}_{i,j,t-1} + \beta_3 (\text{Institutions x Consensus})_{i,j,t-1} + \beta_4 \text{Population}_{i,j,t-1} + \beta_5 \text{GDPgrowth}_{i,j,t-1} \\ & + \beta_6 \text{Development}_{i,j,t-1} + \beta_7 \text{Power distance}_{i,j,t-1} + \beta_8 \text{Masculinity}_{i,j,t-1} + \beta_9 \text{Uncertainty Avoidance}_{i,j,t-1} + \beta_{10} \text{Africa}_{i,j,t} + \beta_{11} \text{Europe}_{i,j,t} \\ & + \beta_{12} \text{Asia}_{i,j,t} + \beta_{13} \text{Transport}_{i,j,t} + \beta_{14} \text{Energy}_{i,j,t} + \beta_{15} \text{Water}_{i,j,t} + \beta_{16} \text{Y11\_17}_{i,j,t} + \beta_{17} \text{Y04\_10}_{i,j,t} + \beta_{18} \text{BOT}_{i,j,t} + \beta_{19} \text{Merchant}_{i,j,t} \\ & + \beta_{20} \text{Investment}_{i,j,t} + \beta_{21} \text{Sponsor}_{i,j,t} + u_j + \varepsilon_{ij}\end{aligned}$$

The first term 'Duration' is the dependent variable of the number of years of each PPP. The subscript 'i' (i = 1, …, n) corresponds to each one of the projects carried out in a specific year, 'j' (j = 1, …, h) is the group of countries where the projects are nested and 't' represents each of the years analysed (t = 1, …, m). After that appear the variables related to H1 (Institutions), H2 (Consensus) and H3 (Consensus x Institutions); followed by the control variables related to the country location (Population, GDP growth, Development), the rest of Hofstede's cultural dimensions (Power Distance, Masculinity, Uncertainty), continents (Africa, Asia, Europe), sectors (Transport, Energy, Water), specific characteristics of the projects (BOT, Merchant, Investment, Sponsor) and periods 2004–2010 and 2011–2017 (Y04_10, Y11_17). The βs are the estimated parameters, whose concordance in sign and significance with those that accompany the variables according to the hypotheses (positive values for $\beta_1, \beta_2, \beta_3$) will allow verifying if they are not rejected. Finally, $u_j \sim N(0, \sigma_u^2)$ represents the unobserved country effects shared by all the projects within the same country, and $\varepsilon_{ij} \sim N(0, \sigma_\varepsilon^2)$ represents the unobserved individual effects, assuming they are uncorrelated with each other.

3.3. Data set

The project characteristics are available at the World Bank's Private Participation in Infrastructure database [12,27,42,83]. The database collects the information exclusively from publicly available sources and covers projects from low- and middle-income countries. According to the location of the project, we added other country-level information to each observation, such as the values of the cultural dimensions [74], the Governance Indicators [41,42] and the World Development Indicators from the World Bank [12,52,82].

Although the database has about 8500 projects, those PPPs in which ownership can be temporarily transferred to the private operator were selected as well as those in which the durational value is not missing. Thus, the sample includes 1873 observations from 36 countries (see Fig. 3 and Table A4 in the Appendix). The sample includes projects in Africa (162), America (841), Asia (801), Europe (68) and Oceania (1). The average of projects per year is around 89 observations and the data cover the period from 1997 until 2017.

Table 1 summarises the descriptive statistics for the variables included in the models, and Table 2 displays the matrix of correlations and individual VIF values that range from 1.25 to 7.60. These results show that there is no presence of multicollinearity problems because the individual values and their averages are lower than the limit of 10 suggested for multiple regression models [85].

4. Results

4.1. Main analyses

First, we performed a chi-square goodness-of-fit test to check whether our sample's dependent variable is likely to be from a Poisson regression distribution. We found that the model fits well because the goodness-of-fit chi-squared test is not statistically significant. Table 3 provides the statistics of five models that include only the control variables (Model 1) and then the ones for H1 (Model 2), H2 (Model 3), H1 and H2 together (Model 4) and all the variables (including the interaction) to prove H3 (Model 5).

In all models, the Wald chi-square is statistically significant as compared to the null model with no predictors. Furthermore, the likelihood ratio (LR) test compared with the Poisson regression indicates that all the multilevel models are more conveniently considered hierarchically using this technique. The β coefficients of each parameter represent the impact on the independent variable, with their standard errors in parentheses. For instance, the coefficient for 'Consensus' is 0.006 (Table 3, Model 5). This means that the expected increase in log count for a one-unit increase in 'Consensus' is 0.006. The indicator variable 'Transport' is the expected difference in log count between the transportation sector and the rest of the sectors, given that all the other variables in the model are held constant (Table 3, Model 5). Concerning the control variables, fifteen out of eighteen keep the sign and significance, with 'Uncertainty', 'Asia' and 'Y04-10' as exceptions that keep the sign but become significant in some models. The 'random parameter' captures the variability in the outcome variable (e.g., project duration) between different group-level units (e.g., countries) that is not explained by the fixed effects included in the model. Thus, in Model 1, the random

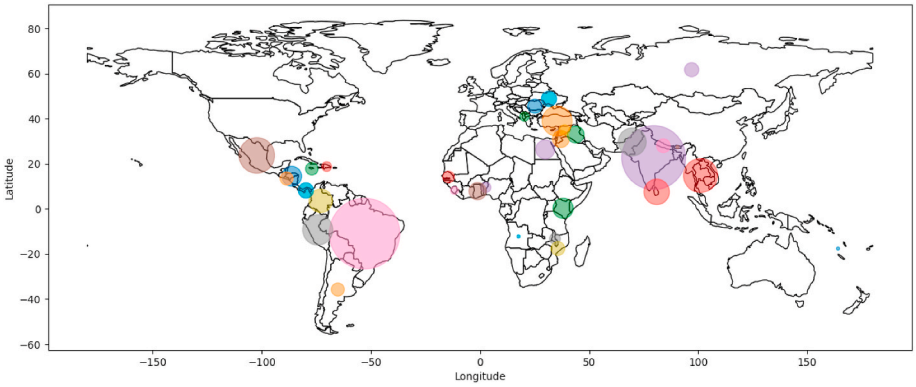

Fig. 3. Number of projects analysed by location.

Table 1
Descriptive statistics[a].

Variables	Median	Mean	Std. Dev.	Min.	Max.
Dependent variable					
Duration	25	24.58	9.16	3	99
Hypotheses variables					
Institutions	−0.20	−0.24	0.32	−1.89	0.53
Consensus	−37	−33.27	11.76	−78	−11
Control variables					
Population	18.78	18.53	1.58	13.07	21.00
GDP growth	3.37	3.27	3.84	−14.42	50.12
Development	8.11	7.98	1.11	4.93	9.55
Power Distance	−69	−72.26	8.89	−95	−45
Masculinity	−49	−48.91	12.24	−80	−10
Uncertainty avoidance	−76	−65.92	18.42	−97	−13
Africa	0	0.08	0.28	0	1
Europe	0	0.03	0.18	0	1
Asia	0	0.42	0.49	0	1
Transport	0	0.10	0.31	0	1
Energy	1	0.51	0.49	0	1
Water	0	0.03	0.18	0	1
BOT	0	0.35	0.47	0	1
Merchant	0	0.32	0.46	0	1
Investment	4.68	4.62	1.44	0.47	10.47
Sponsor	0	0.47	0.49	0	1
Y04_10	0	0.32	0.48	0	1
Y11_17	0	0.38	0.49	0	1

[a] N = 1873 observations.

parameter means that the estimated variance of the random intercepts across different countries is approximately 0.022.

According to the hypotheses results from Table 3, the parameters related to the current institutions' variable are as expected in Hypothesis 1 (H1), positive and significant in Model 2 ($\beta_1 = 0.160$), Model 4 ($\beta_1 = 0.164$) and Model 5 ($\beta_1 = 0.108$), which means we cannot reject it. Regarding the variable related to the importance of the consensus mechanisms (H2), its parameters are positive and significant in all the models (M3: $\beta_2 = 0.005$; M4: $\beta_2 = 0.005$; M5: $\beta_2 = 0.006$), which means the proposed Hypothesis 2 cannot be rejected. According to the results of the interaction between the mentioned previous variables (consensus x institutions), the beta parameter is as expected, significant and positive ($\beta_3 = 0.009$), which means we cannot reject Hypothesis 3 (H3).

After validating the individual models and checking the results, we performed the likelihood ratio test (LR) to check which of the five models is the best fit (LR test vs. Model 5, Table 3), comparing each of the Models 1, 2, 3 and 4 against Model 5, which includes the variables incorporated in all the hypotheses. The results show that Model 5 is the best fit among the five models.

Following other authors [19,26] and given that Poisson models are nonlinear [84], we also calculated the marginal effects and predictions to show the interaction effects on consensus mechanisms and duration when comparing the different levels of institutions. Thus, Fig. 4 shows that this positive relationship between consensus mechanisms and the duration of Public–Private Partnership agreements strengthens when the formal institutions have higher quality. A more exhaustive analysis of the interaction appears in the Appendix (Table A5, Figure A5).

A more exhaustive examination was also conducted to ensure the validity of the results obtained when considering the different dimensions of institutions.

4.2. Robustness analyses

We re-examined the hypotheses from the complete model in the previous section (Model 5). Since the variable 'Institutions' was composed of six items, we decomposed it into its dimensions, recalculating the interaction where it appears in Models 6 to 11 (Table A6, Appendix).

In all the Models, the Wald chi-square is statistically significant as compared to the null model with no predictors, and the likelihood ratio (LR) test indicates that all the multilevel models fit better than not using them. Furthermore, most of the control variables have the same sign and significance as Model 5, although the results are omitted for the sake of brevity.

Regarding the results related to the hypotheses, some of the different institutional dimensions are similar to the ones previously found (Table A6). Thus, the institutional dimensions of 'Rule of law' (M6: $\beta_1 = 0.109$) and 'Political Stability' (M9: $\beta_1 = 0.073$) have positive and significant beta parameters, as expected in Hypothesis 1.

In addition, whatever institutional variable was used, the consensus was positive and significant in all models (M6: $\beta_2 = 0.007$; M7: $\beta_2 = 0.003$; M8: $\beta_2 = 0.004$; M9 and M10: $\beta_2 = 0.005$; M11: $\beta_2 = 0.006$). Thus, consistency with the results obtained in Hypothesis 2 is supported.

Finally, the interactions of the consensus with the institutional dimensions are positive and significant for the following institutional dimensions: Rule of Law (M6: $\beta_3 = 0.011$), Political Stability (M9: $\beta_3 = 0.003$), Control of Corruption (M10: $\beta_3 = 0.005$) and Voice and Accountability (M11: $\beta_3 = 0.010$). Thus, the results are consistent with Hypothesis 3.

Despite these results, there is an institutional dimension, Regulatory Quality, which is not significant either individually or interacting with the consensus variable (Model 8). In the same way, Government Effectiveness is negative for its interaction with the consensus mechanisms (M7: $\beta_2 = -0.006$), which is opposite of what was expected. Considering all the results together, the proposed hypotheses and previous results are consistent with the last ones, but the different effects found require more

Table 2
Correlation Matrix and Variance Inflation Factor (VIF) values[a].

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1. Duration	**0.33**																				
2. Institutions	**−0.12**	**−0.28**																			
3. Consensus	0.15	**0.12**	**−0.64**																		
4. Population	**−0.02**	**−0.09**	**−0.14**	**0.17**																	
5. GDP growth	**0.41**	**0.44**	**0.10**	**−0.17**	**−0.20**																
6. Development	**0.13**	**0.08**	**0.16**	**−0.05**	**−0.18**	**0.14**															
7. Power Distance																					
8. Masculinity	**−0.04**	**0.08**	**0.22**	**−0.36**	−0.02	**−0.07**	**0.06**														
9. Uncertainty	**−0.21**	**−0.10**	**−0.39**	**0.34**	**0.22**	**−0.68**	**−0.09**	**−0.05**													
10. Africa	**−0.20**	**−0.16**	**0.20**	**−0.28**	−0.03	**−0.36**	−0.02	**0.08**	**0.07**												
11. Europe	**−0.05**	**−0.08**	**0.06**	**−0.14**	**−0.06**	0.03	**−0.42**	**0.14**	**−0.26**	**−0.06**											
12. Asia	**−0.19**	**−0.27**	**−0.28**	**0.37**	**0.29**	**−0.49**	−0.02	**0.10**	**0.57**	**−0.27**	**−0.17**										
13. Transport	**0.09**	0.01	**−0.10**	**0.16**	**0.05**	**−0.06**	**−0.10**	**−0.19**	**0.08**	**−0.06**	−0.01	**0.08**									
14. Energy	**0.43**	**0.27**	**−0.15**	**0.15**	**−0.07**	**0.39**	**0.19**	0.01	**−0.12**	**−0.21**	**−0.12**	**−0.16**	**−0.36**								
15. Water	**−0.06**	**0.06**	**0.05**	0.00	**−0.04**	**0.09**	**−0.09**	**−0.14**	**−0.11**	−0.04	0.01	**−0.09**	**−0.07**	**−0.19**							
16. BOT	**0.33**	**0.19**	**−0.09**	**0.14**	**−0.05**	**0.22**	0.02	**−0.18**	**−0.15**	**−0.16**	**−0.06**	**−0.15**	**0.45**	**0.11**	**0.21**						
17. Merchant	**−0.43**	**−0.30**	**0.19**	**−0.26**	**0.07**	**−0.37**	**−0.09**	**0.14**	**0.10**	**0.29**	**0.11**	**0.13**	**−0.23**	**−0.69**	**−0.13**	**−0.52**					
18. Investment	**0.14**	−0.01	0.04	**0.10**	**0.07**	**0.15**	**0.06**	**−0.13**	**−0.13**	−0.01	0.01	0.03	**0.11**	**−0.06**	**−0.08**	0.03	**0.07**				
19. Sponsor	**0.14**	**0.19**	**−0.34**	**0.41**	**0.17**	**−0.08**	**0.06**	**−0.05**	**0.23**	**−0.21**	**−0.12**	**0.30**	**0.12**	**0.10**	−0.01	**0.10**	**−0.19**	−0.03			
20. Y04_10	0.00	**−0.10**	0.02	**−0.04**	**0.13**	**−0.17**	0.01	0.03	0.02	**0.08**	**−0.02**	0.03	**0.05**	**−0.16**	0.02	**0.07**	**0.14**	**0.09**	**0.08**		
21. Y11_17	**0.17**	**0.08**	−0.02	**0.04**	**−0.05**	**0.44**	**0.04**	**−0.05**	**−0.11**	**−0.09**	**−0.04**	**−0.10**	**−0.05**	**0.33**	−0.03	0.00	**−0.28**	**0.07**	**−0.11**	**−0.71**	
VIF (mean = 3.05)	1.59	2.18	2.04	2.77	1.22	7.35	1.46	1.57	3.69	2.17	1.61	2.64	4.13	8.73	2.10	1.87	7.60	1.25	1.42	2.65	4.05

[a] N = 1873. *In bold format P < 0.01.

detail in the discussion section.

The effects of the main interaction, as well as its institutional dimensions, were replicated by clustering the mean by year, obtaining similar results. In addition, we performed a factorial analysis of the institutional dimensions to identify a single factor as an alternative proxy for the quality of the overall institutional framework. These analyses have been omitted for reasons of space and can be requested from the authors.

5. Discussion

The findings suggest that there is support for the proposed hypotheses. Specifically, the results indicate that both separated and interacting, formal and informal institutions have significant associations with the duration of the concessions. These findings align with the stated hypotheses, providing empirical support for the relationships proposed therein.

The findings are consistent with previous studies that have examined similar variables in the context of PPPs and institutional dynamics. Studies such as those by Jiang et al. [83] and Wang et al. [42] have also highlighted the importance of institutional factors, governance environments and risk allocation in shaping private investment decisions and project outcomes within PPP markets, particularly in developing countries. Moreover, the emphasis on consensus as a significant factor echoes research by Kellermanns et al. [69] and Salas-Fumás et al. [86] that underlines the importance of strategic consensus and organisational structure in driving performance outcomes. However, these studies have not analysed the performance of the project from the perspective of duration nor how both formal and informal institutions interact, specifically with respect to concessions.

The findings corroborate the notion that both institutional factors and economic considerations exert substantial influence on the efficacy of public–private partnerships. Institutional elements emerge as significant drivers of PPP success, consistent with institutional theories [34,46]. Moreover, the study emphasises the importance in enhancing PPP duration of consensus within organisations, a key component of institutional dynamics.

The academic literature and practitioners document unstable or poorer institutions as a source of risk that can block the partnership [21,79]. In developing countries, regulatory or political uncertainties persist even during the operations phase after the construction of the assets [87]. For this reason, scholars point out that the stability and engagement of the government should be adapted to the entirety of the project for its achievement [88].

The level of consensus mechanisms in the environments where agreements are carried out also positively affects the duration of partnerships. TCT emphasises that costs will be lower when more information is available to the contracting parties before and during the performance of the contract [89]. Therefore, it is rational for parties to seek out information that will improve their contracting, to explore alternatives and to align the decisions with all stakeholders because they can decrease the principal–agent problem and generate trust in the organisation [90]. The trust generated among the members of an agreement is central to the economics of contracting [28,91]. In fact, the specific risks associated with the lack of alternatives and trust are identified by academics in PPPs, such as the lack of commitment from either partner, third-party tort liability, scarce guarantees provided by the government in the process of collaboration [21], a staff crisis or inadequate distribution of responsibilities and risks that are not regulated in the contract [21]. Thus, the level of consensus mechanisms in each environment can constitute an aspect that favours the opinion of its economic agents and its adaptation to unfavourable changes, both internally among the organisation's stakeholders as well as externally in its dialogue with the public part of the partner when changes in the environment occur [72,92].

In addition, better current institutions—that govern the moment of

Table 3
Multilevel Poisson Regressions: PPP's duration as dependent variable[a].

Variables	Model 1	Model 2	Model 3	Model 4	Model 5
Institutions (H1)		0.160 (0.042)***		0.164 (0.041)***	0.108 (0.047)**
Consensus (H2)			0.005 (0.002)**	0.005 (0.002)***	0.006 (0.002)***
Institutions x Consensus (H3)					0.009 (0.003)**
Population	0.040 (0.020)**	0.053 (0.020)***	0.046 (0.017)***	0.053 (0.017)***	0.056 (0.019)***
GDP growth	0.003 (0.001)***	0.003 (0.001)**	0.003 (0.001)***	0.003 (0.001)**	0.003 (0.001)**
Development	0.081 (0.018)***	0.047 (0.019)**	0.069 (0.018)***	0.048 (0.019)**	0.048 (0.019)**
Power Distance	0.001 (0.002)	0.001 (0.002)	0.002 (0.002)	0.001 (0.002)	0.003 (0.002)
Masculinity	0.002 (0.001)	0.001 (0.001)	0.002 (0.001)	0.001 (0.001)	0.001 (0.001)
Uncertainty	0.002 (0.001)*	0.002 (0.001)	0.002 (0.001)	0.001 (0.001)	0.001 (0.001)
Africa	−0.022 (0.082)	−0.047 (0.083)	−0.039 (0.074)	−0.029 (0.077)	−0.026 (0.080)
Europe	0.042 (0.112)	0.070 (0.112)	0.118 (0.099)	0.120 (0.103)	0.136 (0.109)
Asia	−0.154 (0.076)**	−0.127 (0.078)*	−0.121 (0.068)*	−0.077 (0.073)	−0.078 (0.076)
Transport	0.282 (0.029)***	0.301 (0.032)***	0.302 (0.033)***	0.303 (0.032)***	0.305 (0.033)***
Energy	0.326 (0.026)***	0.346 (0.029)***	0.346 (0.029)***	0.347 (0.029)***	0.350 (0.033)***
Water	0.123 (0.012)***	0.115 (0.041)***	0.119 (0.041)***	0.115 (0.041)***	0.118 (0.041)***
BOT	0.123 (0.012)***	0.108 (0.012)***	0.109 (0.012)***	0.108 (0.012)***	0.108 (0.012)***
Merchant	0.078 (0.026)***	0.091 (0.030)***	0.092 (0.030)***	0.092 (0.030)***	0.097 (0.030)***
Investment	0.023 (0.003)***	0.022 (0.003)***	0.023 (0.003)***	0.022 (0.003)***	0.022 (0.003)***
Sponsor	0.013 (0.010)	0.012 (0.011)	0.015 (0.011)	0.012 (0.011)	0.014 (0.011)
Y04_10	0.025 (0.016)	0.056 (0.019)***	0.032 (0.018)*	0.056 (0.019)***	0.052 (0.019)***
Y11_17	−0.024 (0.023)	0.018 (0.026)	−0.016 (0.025)	0.017 (0.026)	0.012 (0.026)
Intercept	1.789 (0.414)***	1.660 (0.423)***	1.789 (0.371)***	1.686 (0.388)***	1.748 (0.404)***
Random parameter	0.022 (0.006)	0.022 (0.007)	0.016 (0.004)	0.018 (0.005)	0.020 (0.006)
Wald χ^2	1027.20	850.72	853.74	868.65	868.50
LR test vs. Poisson model	259.12***	196.81***	205.20***	202.71***	207.39***
LR test vs. Model 5	18.29***	10.94**	12.58**	4.52**	–
Pseudo R^2	0.64	0.64	0.64	0.64	0.64

[a] ***Significant at 1%; **Significant at 5%; *Significant at 10%. Standard errors are in parentheses. N = 1873.

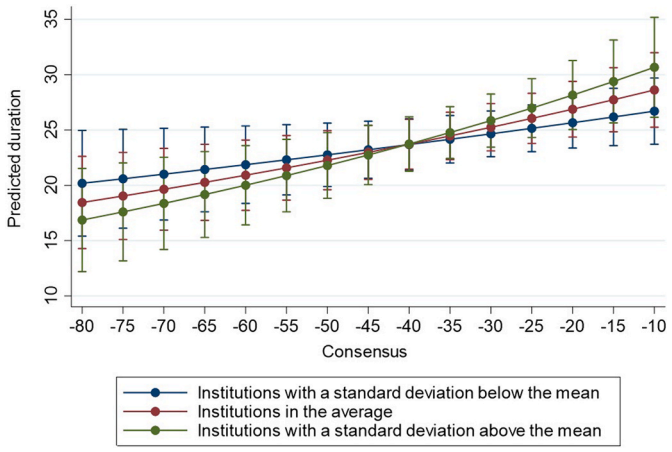

Fig. 4. Predictive margins with 95% CIs.

carrying out the partnerships—and the prevalence of consensus mechanisms have a positive interaction effect that reinforces the length of this type of collaboration. This effect would confirm the importance of both aligned factors to successfully carry out developments in which one of the partners is the public party and there is a long-term duration. We detect the same interaction effect when we decompose the institutional dimension: The rule of law, political stability and control of corruption as well as voice and accountability show a positive impact when they are aligned with higher degrees of consensus mechanisms. This phenomenon would appear because of the complementarities between the institutions, whose interdependencies positively intersect in the agents' behaviours, showing super-modularity effects [64,93].

This explanation has coherence with the result of the dimension of regulatory quality because once the norms are articulated together, the quality of norms would nullify the positive effect derived from consensus mechanisms, making the role of consensus mechanisms less necessary. This relationship is compatible with the explanation of Ahlering and Deakin [94], p. 872), who pointed out that there are 'functional substitutes or equivalents – institutions which substitute for one another, in the sense of performing a similar function in different ways – across systems, and at different periods within the same national system'.

In the same way, the negative impact of government effectiveness interacting with the consensus mechanisms would negatively affect the duration of the contracts. Governments articulate the principles of rules within legal frameworks that can exhibit different effectiveness, depending on how they adapt the means available to policies [41]. However, the dimension may reflect the effectiveness of the government considering private and public organisational forms as separate spheres but not its adaptation to hybrid forms of the market. In this case, the effectiveness of the measures could generate organisational dysfunctions in hybrid forms of government, which require specific regulations affected by general frameworks. Thus, high levels of consensus could weigh down decision making to limits that make it difficult for the partnership to prosper, limiting its duration to shorter periods.

Our research emphasises the critical importance of considering institutional factors and consensus mechanisms in the design and management of concessions. It is crucial to recognise that in environments where consensus levels or institutional quality are less favourable, additional mechanisms are necessary to ensure project stability and longevity.

For managers overseeing PPPs, this may entail implementing robust risk management strategies and contingency plans to mitigate potential disruptions arising from weak institutional frameworks or stakeholder discord. Moreover, policymakers play a key role in creating an enabling environment for PPPs by providing adequate government support, streamlining the award process and implementing mechanisms to monitor and enforce compliance with contractual obligations. By strengthening project governance structures and enhancing

transparency and accountability mechanisms, policymakers can help mitigate risks associated with weak consensus levels or institutional deficiencies, thereby enhancing the likelihood of project success and delivering sustainable outcomes for all stakeholders.

In conclusion, while our study highlights the positive impact of institutional quality and consensus mechanisms on PPP outcomes, it also emphasises the need for supplementary measures to safeguard project duration in less favourable environments.

Despite the results, there are certain limitations when it comes to generalising the findings of this research. Thus, the results may not have implications at the firm level or in other contexts, such as developed countries, or for potential intersectoral differences.

In addition, the observed statistical effects may appear modest in terms of size; however, the attained significance indicates a robust statistical relationship. This is crucial for practitioners, as it emphasises the practical relevance and reliability of our findings in informed decision making.

Further research in this domain could delve into firm-level analyses to understand how individual companies deal with the challenges posed by institutional quality and consensus mechanisms in PPPs. Additionally, conducting comparative studies across regions or countries with varying institutional contexts could shed light on the factors contributing to successful PPPs in different settings. Sector-specific analyses could provide insights into the specificities within different industries, while qualitative research methods, such as interviews and case studies, could offer a deeper understanding of the mechanisms through which institutional quality and consensus influence PPP outcomes.

6. Conclusion

The paper contributes to academic research in several respects. First, this article proposes, for the first time, the determinants of the duration of agreements in concessions as a measure of value creation in hybrid organisations. Second, the work analyses the role of formal institutions and the consensus mechanisms among their members as factors that affect the stability of the partnership. Third, the interrelationships between the two variables were analysed, revealing that, in general, both have multiplier effects that allow each to complement the other to carry out more lasting agreements. Finally, when considering the six dimensions of 'Institutions' separately, we observed positive interaction effects in four dimensions, suggesting multiplicative super-modularity effects. However, in one dimension, there was a negative interaction effect, indicating sub-modularity.

The findings can help managers to design specific institutional improvements and facilitate decision making by private investors.

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CRediT authorship contribution statement

Jorge Fleta-Asín: Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Resources, Software, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing. **Fernando Muñoz:** Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Resources, Software, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing. **Carlos Sáenz-Royo:** Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Resources, Software, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing.

Data availability

All the data are public

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APPENDIX

Table A4
List of countries hosting partnerships in alphabetical order by continent.

Africa	Angola, Benin, Cabo Verde, Egypt, Ghana, Kenya, Malawi, Mozambique, Senegal, Sierra Leone.
America	Argentina, Brazil, Colombia, El Salvador, Dominican Republic, Honduras, Jamaica, Mexico, Panama, Peru.
Asia	Bhutan, India, Iraq, Jordan, Lebanon, Nepal, Pakistan, Sri Lanka, Syrian Arab Republic, Thailand, Turkey[a].
Europe	Albania, Romania, Russian Federation[a], Ukraine.
Oceania	Fiji.

[a] It can be included in Europe or Asia because of its surface and location.

Table A5
Marginal effects for the consensus level interacting with the formal institutions.[a]

Institutions	Model 5 Marginal effects
−1 SD below the mean	−0.123 (1.88)
+1 SD above the mean	6.072 (1.45)***

[a] ***Significant at 1%; **Significant at 5%; *Significant at 10%. Standard errors are in parentheses. SD: Standard deviation.

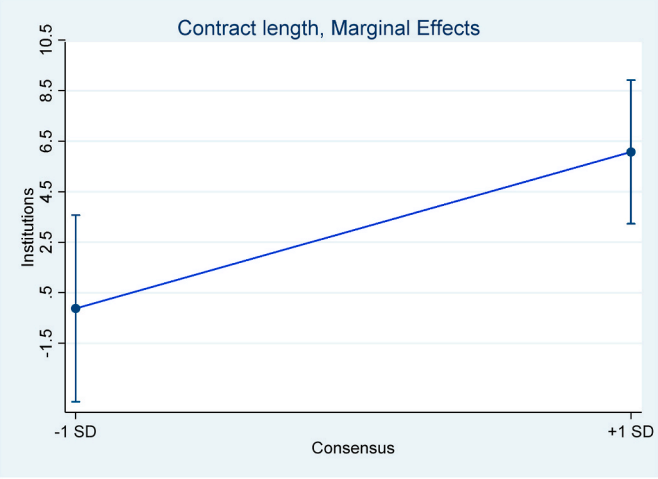

Fig. A5. Margins plot, consensus level interacting with the formal institutions.

Table A6
Multilevel Poisson Regressions decomposing institutional dimensions.[a]

Variables	Model 6	Model 7	Model 8	Model 9	Model 10	Model 11
	Rule of law	Government effectiveness	Regulatory quality	Political stability	Control of corruption	Voice and accountability
Institutions (H1)	0.109 (0.031)***	0.040 (0.037)	−0.030 (0.031)	0.073 (0.019)***	−0.001 (0.034)	0.012 (0.038)
Consensus (H2)	0.007 (0.002)***	0.003 (0.001)*	0.004 (0.002)**	0.005 (0.002)*	0.005 (0.002)***	0.006 (0.002)***
Institutions x Consensus (H3)	0.011 (0.002)***	−0.006 (0.003)*	−0.003 (0.002)	0.003 (0.001)**	0.005 (0.003)*	0.010 (0.003)***
Controls	YES	YES	YES	YES	YES	YES
Intercept	1.689 (0.426)***	1.813 (0.361)***	1.808 (0.364)***	1.681 (0.370)***	1.766 (0.387)***	1.811 (0.381)***
Random parameter	0.023 (0.007)	0.015 (0.004)	0.015 (0.004)	0.014 (0.004)	0.018 (0.005)	0.017 (0.005)
Wald χ^2	874.21***	862.25***	857.94***	899.92***	852.92***	873.42***
LR test vs. Poisson Model	219.82***	170.20***	191.36***	168.04***	191.95***	204.53***
Pseudo R^2	0.65	0.64	0.64	0.65	0.64	0.64

[a] ***Significant at 1%; **Significant at 5%; *Significant at 10%. Standard errors are in parentheses. Duration as dependent variable. N = 1873.

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