

# Social Legitimacy Challenges in Toll Road PPP Programs: Analysis of the Colombian and Chilean Cases

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**Abstract:** Public–Private Partnership (PPP) programs have been developed widely for more than 30 years across the world. The continuity of these programs depends on an adequate balance of three-dimensional sustainability (i.e., economic, environmental, and social). Nevertheless, social sustainability has been demonstrated as being fragile because of the challenges to achieving the intended social legitimacy in PPP programs. This study aims to understand key challenges in achieving social legitimacy in road PPP programs by analyzing contractual clauses, legal frameworks, and stakeholders' interviews of two toll road PPP programs in Chile and Colombia. Three key challenges to social legitimacy were found: social involvement issues, distrust between impacted and responsible stakeholders, and lack of social criteria within toll tariff policy. Findings reveal that it is required to move beyond current consultation mechanisms and thoroughly involve the impacted groups as a relevant stakeholder typology in order to maximize value creation in user-pay PPP programs. In line with that, this study exposes that the claim of previous research for developing relational governance between the public and the private sectors is not enough for overcoming governance limitations and addressing social legitimacy in user-pay PPPs. It is also necessary to enhance relational governance in a triadic approach. This study contributes to the PPP body of knowledge by redirecting the discussion from overall legitimacy to social legitimacy challenges and by including the impacted stakeholders in the analysis of PPP governance mechanisms. **DOI: 10.1061/(ASCE)ME.1943-5479.0001010.** © *2022 American Society of Civil Engineers*.

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# Introduction

Public–Private Partnerships (PPPs) programs have been developed widely for more than 30 years in developed and developing countries (Castelblanco et al. 2021a; Castelblanco and Guevara 2020; Garvin and Bosso 2008). The continuity of these programs depends on their value creation, that is, the aggregation of benefits derived from these partnerships for different stakeholders (Kivleniece and Quelin 2012). This mainly includes benefits for the public and the private sector, such as complementing resources between these stakeholders (Rangan et al. 2006), increasing life-cycle cost efficiency (Bennett and Iossa 2006), and reducing public fiscal pressure (Engel et al. 2020; Castelblanco et al., forthcoming). However, apart from the public and private dimensions of value creation, PPPs often face significant issues related to social benefit-enhancing and

pending social concerns (Bennett and Iossa 2006; Castelblanco et al. 2021b; Kivleniece and Quelin 2012; Rangan et al. 2006).

A prerequisite for social value creation in PPPs is the development of social legitimacy, which refers to the social appropriation and the desirability of PPPs by impacted stakeholders such as local users and communities (Berrone et al. 2019; Montalbán-Domingo et al. 2019). Social legitimacy is seen as an essential component for the success of PPPs (Hodge 2006; Guevara et al. 2020a), and authors have emphasized the need for increased awareness of social legitimacy (Kort and Klijn 2013). Neglecting social groups impacted by PPPs can trigger social activism against PPPs and, consequently, the erosion of PPP acceptance (Kivleniece and Quelin 2012). User-pay PPPs such as the Cochabamba Water project in Bolivia or the California State Route 91 toll road are prominent examples of how the loss of social legitimacy jeopardizes the success of PPPs and even can lead to their early termination (Hodge et al. 2010; Levitt et al. 2010). Tariff and pricing schemes eroded the social legitimacy of these PPPs and resulted in their early transfer to the public sector (Hodge et al. 2010; Kivleniece and Quelin 2012; Levitt et al. 2010).

Despite the importance of social legitimacy for the success of PPPs, previous research on PPP governance has been traditionally limited to examining general legitimacy issues affecting a third party integrated by a heterogeneous arrangement of stakeholders (e.g., journalists, academics, and labor unions) (Jooste 2010). Prior studies have not substantially focused on legitimacy concerns specifically related to impacted stakeholders. It has mainly prioritized the liability of the responsible stakeholders for achieving PPPs' expected outcomes, thereby neglecting the relevance of impacted stakeholders. This study aims to understand the social legitimacy of PPPs within mature markets and addresses the following research question: (1) What are the challenges for achieving social legitimacy of PPP programs? Roles and relations

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among responsible stakeholders (i.e., the public and the private sectors) and the stakeholders impacted by the PPP projects (i.e., local landowners, local communities, and project users) need to be analyzed to understand the social legitimacy challenges of PPP programs. In this regard, this study adopts a stakeholder perspective from which social legitimacy is shaped through the interaction of the public sector, private sector, and impacted stakeholders during the PPP life-cycle. Based on a multiple-case study of two national PPP programs, Colombia and Chile, the paper shows that achieving social legitimacy in PPP programs comes with several challenges at the institutional, organizational, and program levels.

This study contributes to the PPP literature by redirecting the discussion from overall PPP legitimacy, which has been widely studied before, to social legitimacy challenges. It demonstrates that the intended purpose of social activism for restraining private value capture is not achieved at the project level, as previous research emphasized (Kivleniece and Quelin 2012), but only succeeds at the program level because of the contractual governance guarantees.

#### Background

#### Role of Stakeholders in PPPs

Given the diverse stakeholder categorizations in PPP literature, this paper classifies stakeholders as responsible, interested, and impacted (El-Gohary et al. 2006; Ghadimi 2017; Mostafa and El-Gohary 2015; Zhang and El-Gohary 2014). The public and the private sectors are considered responsible stakeholders since they hold the liability for developing the project to achieve the expected performance outcomes (Mostafa and El-Gohary 2015). Organizations or persons who want to provide opinions and participate in the project are considered interested stakeholders (i.e., chambers of commerce, NGOs, and environmental activists). Additionally, organizations or persons affected by the project's performance are considered impacted stakeholders (i.e., landowners, local communities, and project users).

Prior literature tends to include impacted and interested groups within the same stakeholder typology (Jooste et al. 2009, 2011; Jooste and Scott 2012). However, despite the relevance of interested groups and their influence over impacted stakeholders, this study differentiates both stakeholder categorizations. While interested stakeholders are mainly formal organizations (e.g., chambers of commerce and NGOs), which obey hierarchies and organizational structures that transcend the local scope and could reach a regional, national, and even international scope (Mostafa and El-Gohary 2015); impacted stakeholders comprise parties not always affiliated to formal organizational bodies; such parties sustain permanent local interaction with PPP participants across the project' life-cycle (Zhang and El-Gohary 2014).

The roles of impacted and responsible stakeholders change as PPPs evolve. To understand these, the paper distinguishes three main PPP life cycle phases: the shaping phase, the implementation phase, and the operation phase. The shaping phase includes initial activities from project conceptualization to reaching financial closure (i.e., planning, procurement, and contracting) (Guevara et al. 2020a). The concessionaire is constituted when the shaping phase is about to end (Guevara et al. 2020b; Salazar et al. 2021). Thus, until then, the private sector has yet no significant role in the project. The public sector has the leading role and is usually responsible for developing most of the shaping phase goals. To reduce potential conflicts in later phases, it is necessary to meaningfully involve impacted stakeholders in the public sector's decision process (De Schepper et al. 2014). Such involvement of impacted stakeholders in the shaping phase would allow the public sector to customize the project scope by considering their concerns and interests (Boyer et al. 2016).

In the implementation phase, the concessionaire completes the final project designs and is responsible for constructing the project (Dewulf and Garvin 2020). In this phase, the public sector transfers part of its former role to the concessionaire (South et al. 2018), and impacted stakeholders increasingly interact with the private sector. For example, at the beginning of the implementation phase for road PPPs, the impacted stakeholders are primarily landowners and local communities. They can be affected by the requirement to sell their land either partially or as a whole. If there is no agreement between the landowner and the government, an expropriation process that is sometimes backed by police force can be employed to force citizens to concede their property by law. As construction progresses, users can be affected as well by delays in travel time and the likely increase of toll tariffs. Impacted stakeholders are especially sensitive to construction delays which reduce trust in the private sector (Levitt et al. 2010).

The operation phase, which is the phase that lasts the longest, shows an arrangement where the public sector role is reduced to the supervision of the accomplishment of service levels. In contrast, the private sector maintains higher involvement and control (South et al. 2018). In this last phase, the impacted stakeholders are significantly sensitive to variations in toll tariff and service levels (Levitt et al. 2010). As tariffs increase, their willingness to pay decreases and can lead to social tension (Levitt et al. 2010). Social legitimacy of PPPs thus evolves from expectations regarding the promises (often too optimistic) of social revenues associated with the intended project made by governments in the shaping phase and the accomplishment of such promises (or lack thereof) by the concessionaire during the implementation and operation phase (Boyer 2019).

## Social Legitimacy and Stakeholders in PPPs

Social legitimacy is shaped by the perception of impacted stakeholders on how PPPs respond to their demands and needs (Abdelal and Ruggie 2009). It can be defined as the level of this social perception required for any PPP to be recognized as appropriate and desirable based on the impacted stakeholders' value objectives and concerns (e.g., social welfare, participation, communication with responsible stakeholders, service quality) (Levitt et al. 2014; Suchman 1995). In this sense, social legitimacy entails the impacted stakeholders' subjective interpretation of the relationship between the PPP project and the societal context in which this is immersed. This interpretation is complex and not monolithic because it is built by heterogeneous individuals, groups, and interests (Li et al. 2019).

PPPs entail an intrinsic trade-off between social legitimacy outcomes (i.e., impacted stakeholders' expected benefits) and responsible stakeholders' value objectives (i.e., reducing public fiscal pressure, private sector's profitability, reducing life-cycle costs, and leveraging private managerial skills) (Kochan 2007). It requires responsible stakeholders' further commitments for offering social welfare beyond the boundaries of the initial project scope. In this sense, positive social perception is essential for achieving PPP programs' long-term value creation because it avoids potential pressure from impacted stakeholders to governments and politicians and increases PPP program support (Park et al. 2017; Yuan et al. 2018). Thus, increasing the PPP program's social legitimacy becomes challenging because the private provision of public infrastructure entails the participation of private partners focused on obtaining long-term financial returns from PPP users (i.e., impacted stakeholders) (Jooste et al. 2009). Consequently, toll road PPPs often face dilemmas at the moment of maintaining a balance between communities' desires (i.e., welfare outcomes derived from the PPP project) and responsible stakeholders' managerial interests (i.e., profitability and political interests) (Rwelamila et al. 2015; Verhoest et al. 2015).

To date, stakeholder literature proposes that a suitable strategy for addressing social legitimacy in PPPs is to increase community involvement through having the assistance of a stable political environment and the support of transparent procurement procedures (Matos-Castaño et al. 2014). To do so in an efficient way, transaction cost economics indicates that unified contractual governance structures through the whole life-cycle could be suitable for reducing opportunistic behaviors (Henisz et al. 2012). From the perspective of economics and law, contractual governance elements such as sanctions and incentives are enough to motivate the intended behavior of responsible stakeholders regulated by contracts (Scott 2013). Nevertheless, contractual governance solutions only allow for managing the relationship between the public and private sectors but do not cover the relationship with nonresponsible stakeholders (Benítez-Ávila et al. 2018, 2019).

Building social legitimacy requires complementary governance elements suitable for dealing with impacted stakeholders. Relational governance offers some useful governance mechanisms associated with psychological and sociological perspectives. These are useful for understanding PPP governance issues by considering that human behaviors and decision-making processes are driven by cognitive and normative factors (Henisz et al. 2012). In this sense, the relational governance perspective highlights the importance of establishing long-term trust-based partnerships between public and private parties (Delhi and Mahalingam 2020) and also specifies that creating social legitimacy requires dismantling impacted stakeholders' distrust about the private provision of public infrastructure and services (Yan and Zhang 2020).

Henisz et al. (2012) integrated psychological, sociological, legal, and economic governance perspectives to suggest that responsible stakeholders may employ campaigns and communication strategies to indirectly influence impacted stakeholders. Moreover, impacted stakeholders' opportunistic behavior could be limited by aligning their interests within the concessionaire's goals. This alignment of goals requires that the public sector engages and includes impacted stakeholders in the decision-making processes throughout the PPP shaping phase (Wallner 2008; Xue et al. 2020; Yang and Shen 2015). Accordingly, in order to reduce information asymmetry, enhance mutual rust, and motivate cooperative behaviors, responsible stakeholders should develop strong social skills for establishing high-level shared goals with impacted groups (Fligstein 2001; Solheim-Kile and Wald 2019). Such abilities should be directed to identify impacted stakeholders' identities and interests, implement capability-building strategies, and execute stakeholder management processes (Amadi et al. 2020).

Stakeholder management literature also emphasizes the role of persuasion, deputation, negotiation, and flexibility as key strategies that responsible stakeholders should perform for engaging impacted stakeholders (Ninan et al. 2019). When responsible stakeholders are able to provide impacted stakeholders with reasons to cooperate by building a sense of connection between the two parties, impacted groups may modify their behavior based on the perception that PPP goals are aligned with their interests (Suchman 1995). These social skills, therefore, facilitate the connection between impacted stakeholders' identity and PPP collaborative behaviors (Scott and Lane 2000).

## **Research Design**

This research conducted a qualitative multiple-case study including two current PPP road programs in Chile and Colombia to better understand social legitimacy challenges in road PPP programs. A multiple-case study as the preferred research design has the potential to reach more versatility, robustness, replicability, and generalizability of the results than a single case (Yin 2018). It allows for analyzing either contrasting or similar cases for explainable causes. Moreover, multiple-case study research enhances the external validity of results (Yin 2003).

For analyzing the data of both cases, a quasi-longitudinal approach was employed by combining some of the advantages of longitudinal analysis with cross-sectional data without analyzing the PPP projects' whole life-cycle within both programs (Levitt et al. 2014). This distinction is relevant because developing a longitudinal approach is not possible because the whole life cycle of the PPP projects can last more than 30 years. The two PPP programs include Design-Build-Finance-Operate-Maintain (DBFOM) projects in different phases of the life cycle (Table 1). All projects achieved financial closure in the last decade, but none of the projects has finalized the operation phase. Some of the projects are currently in the implementation phase, and the remaining ones are in the operation phase.

#### Case Study Selection

There are several reasons for choosing the road PPP programs in Chile and Colombia: (1) both countries share the tradition of the Spanish legalistic regime from colonial times to the present, (2) based on their population Chile and Colombia are mediumsized countries in Latin America. The former is the third, and the latter is the seventh most populated country in the region, (3) each country has developed mature road PPP markets that include almost 50 projects and worth more than 13 billion USD, (4) in both countries, the PPP programs mainly cover road projects compared to other infrastructure projects such as airports, hospitals, and hydropower projects, (5) both countries have implemented new PPP legislation, enhancing the legal framework for the PPP programs considered in this multiple-case study (i.e., Law 24010/2010 in Chile and Law 1508/2012 in Colombia), (6) road PPP projects engage a significant number of stakeholders, including potential users who will pay toll tariffs and public entities responsible for permitting, planning, financing, building, and operating these projects, and (7) these projects affect communities through expropriations, externalities, and environmental impacts.

Table 1. Current road PPP programs in Colombia and Chile

Country	Concession generation	Granted	km	Number of projects	Initial investment (millions of US)
Colombia	Fourth Generation	2012-present	4,563	25 <sup>a</sup>	15,507
Chile	After Act 20,410	2010-present	765	12 <sup>a</sup>	4,408

<sup>a</sup>Projects with a financial close at 30/06/20.

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Table 2. Legislation and contractual information analyzed

Document	Chile	Colombia
Contract	12 contracts	25 contracts
PPP law	Law 20410/2010	Law 1508/2012
	Supreme Decree 124/2009: ILO 169 ratification	Constitution of 1991: Article 330. Indigenous territories
	Supreme Decree 66/2014: ILO 169 implementation	Decree 1320/1998: Prior consultation for the exploitation of natural resources within Afro-descendant and indigenous territories
	Impact Assessment System Ordinance 140143/2014:	Decree 2613/2013: Protocol for prior consultation
	Preliminary analysis of Indigenous groups	Presidential Directive 10/2013: Steps for carrying out prior consultation
	Law 19300/1994: General Environmental Law	Law 21/1991: Ratification ILO Convention 169
Complementary	Law 19253/1993: Indigenous Law	Ruling SU039/1997: Ethnic Groups' prior consultation
Legal framework	Supreme Decree 40/2012: Regulation of the	Law 1682/2013: Infrastructure Law
-	Environmental	Law 99/1993: General Environmental Law
		Ruling C030/2008: Ethnic Groups to be consulted
		Court decision T129/2011: Prior consultation rights
		Law 1082/2015: National Planification

Between the 1990s and 2020, the Colombian PPP institutional framework has evolved systematically to improve risk allocation and planning procedures, enhance flexibility in PPP contracts, and incorporate full implementation of project finance principles. However, the Colombian PPP market still struggles with attracting international investors (Cardona and Ortiz 2017; Rufián 2002). In this context, the current Colombian road PPP program analyzed in this study was established in 2013 and includes 25 projects with a cumulative value of US \$15 billion (Tables 1 and 3). This PPP program has been the most ambitious PPP program in the country's history and was shaped by the regulatory framework established in Law 1508 with the support of the Inter-American Development Bank (Leal 2019).

On the other hand, the current Chilean road PPP program was established in concordance with Law 20,410. This piece of legislation amended the concessions law of 2010 and created a new legal framework for PPP projects. The current program includes 12 projects with a cumulative value of US \$4 billion (Tables 1 and 3). It incorporates three urban PPPs within Santiago and the reconcession of five projects first granted in the 1990s and recently transferred back to the government. The remaining four PPPs are roads near the three main cities in Chile (i.e., Santiago, Concepcion, and La Serena).

#### Data Collection

The authors conducted a content analysis of scientific literature on PPP and social legitimacy. The literature search included the following keywords: *PPP*, *P3*, *Public Private Partnership*, *BOT*, *build operate transfer*, *toll road*, *private finance initiative*, *PFI*, *concession*, *social legitimacy*, and *legitimacy*. It was focused on the *Web of Science* database between 2000 and 2021, resulting in 164 publications. Next, the search was screened excluding unrelated research areas (e.g., *Environmental Sciences Ecology*, *Evolutionary Biology*, *History*). Based on the screening, 102 publications were removed and 62 remained. Finally, the titles and abstracts were screened to remove those unrelated to the purpose of the study, resulting in 39 remaining publications.

After finishing the content analysis, case study data were collected through triangulating multiple sources. First, a comprehensive review of the legislation and contracts from both countries' PPP programs was performed to achieve a deeper understanding of the current state of the roles, responsibilities, and relations among stakeholders established within the PPP programs governance framework (Table 2). Therefore, the road contracts of all the projects of the programs were addressed. This includes 25 projects in Colombia accounting for 4,563 km and 12 projects in Chile accounting for 765 km (Table 3). The projects correspond to the DBFOM project delivery scheme under user-financed models, which the main revenue source is toll charges. The PPP contracts gathered from the official online contracting platforms in both

**Table 3.** PPP highway contracts awarded in the last PPP program inColombia and Chile

Country	Project	Length (km)
Colombia	Cartagena-Barranquilla	147
	Pacifico 1 Highway	46
	Cundinamarca's Eastern Perimeter	153
	Pacifico 2 Highway	98
	Pacifico 3 Highway	146
	Northern Bogota Access	62
	Girardot-Puerto Salgar	190
	Sisga's Transversal	137
	Mar 1 Highway	176
	Villavicencio-Yopal	261
	Mar 2 Highway	246
	Bucaramanga-Barranca-Yondo	152
	Guajira-Cesar	350
	Rumichaca-Pasto	80
	North Connection	146
	Puerta de Hierro-Palmar de Varela	203
	Pamplona-Cucuta	63
	Girardot-Neiva	193
	Antioquia-Bolivar	491
	Chirajara-Villavicencio	86
	Girardot-Cajamarca	225
	Malla Vial del Meta	354
	Bogota-Girardot 3rd Lane	145
	NUS Roads	157
	Cambao-Manizales	256
Chile	Melon Tunnel 2nd Concession	5
	Loa Routes 2nd Concession	136
	Nogales-Puchuncavi 2nd Concession	27
	Route 43, Coquimbo Region	86
	Nahuelbuta Route Improvement	55
	Route G-21 Improvement	31
	River Bio-Bio New Bridge	6
	AVO El Salto-Príncipe de Gales	9
	AVO Príncipe Gales-Presidentes	5
	Connection Route 78-Route 68	9
	Camino de la Fruta 2nd Concession	142
	Route 5 Vilos-Serena 2nd Concession	254

			Years of	
Country	ID	Sector	experience	Field of experience
Colombia	CR1	Public	5-10	Risk manager
	CR2	Public	>10	Project manager
	CR3	Private	>10	Consultant
	CR4	Private	>10	Contract manager
	CR5	Public	>10	Ex-Director of the ANI <sup>a</sup>
	CR6	Public	>10	Ex-Director of the FDN <sup>b</sup>
	CR7	Private	>10	Concessionaire's consultant
	CR8	Public	>10	Project manager
	CR9	Public	5-10	Project manager
	CR10	Public	>10	Ex-Director of the ANI <sup>a</sup>
	CR11	Private	>10	Consultant
	CR12	Public	>10	Project manager
	CR13	Private	>10	Consultant
Chile	CHR1	Private	>10	Academic
	CHR2	Public	>10	Project manager
	CHR3	Public	>10	Contract manager
	CHR4	Public	>10	Contract manager
	CHR5	Private	5-10	O&M contractor
	CHR6	Public	>10	Project manager
	CHR7	Public	>10	Consultant
	CHR8	Public	>10	Government official
	CHR9	Private	>10	O&M contractor
	CHR10	Private	>10	O&M contractor

<sup>a</sup>National Infrastructure Agency.

<sup>b</sup>National Development Finance.

countries were analyzed. Each contract document comprises around 350–450 pages (MOP 2020; SECOP 2021).

Next, in-depth semistructured interviews were conducted with PPP experts employing a semistructured interview protocol based on open-ended questions, allowing respondents to sufficiently elaborate on each topic addressed (Antillon et al. 2018; Castelblanco et al. 2020; Rojas et al. 2020). A semistructured approach was chosen because it allows further clarification and information from the interviewees, questions amendments over time, and supporting resources and evidence (Yin 2018). A total of 23 respondents were interviewed; 13 interviews were conducted in Colombia, and the remaining 10 were conducted in Chile. Given that it would not be feasible to reach a representative sample of the impacted stakeholders considering that they are especially local residents to each project, the authors focused on seeking experts from responsible stakeholders, academics, and consultants, which had specific experience as practitioners in the PPP programs. In order to avoid bias, the interviewees were chosen according to their knowledge and involvement in the PPP programs analyzed (Table 4), and the experts were selected to ensure diversity of perspectives, as Yin (2018) recommended. This included experts from the private and public sectors belonging to different functional areas and multiple hierarchy levels within their organizations. Furthermore, only three out of the 23 interviewees had between 5 and 10 years of experience, while the remaining interviewees had more than 10 years of experience. Based on the interview protocol, the authors asked questions about the perceived expectations, priorities, and values of the impacted stakeholders related to the PPP road programs and their involvement in the making-decision processes to understand what affects social legitimacy in these PPP programs. Next, interviewees were asked to describe the risks that create most disputes with the impacted stakeholders and the communication and coordination mechanisms between responsible and impacted stakeholders throughout the life-cycle of PPPs. Additionally, the interviewees were asked about the dispute resolution mechanisms



available for impacted stakeholders and the overall relationship between responsible and impacted stakeholders. All interviews were audio-recorded and later transcribed into text to ensure accuracy and strengthen the analysis. All interviews lasted between 50 and 120 min and were held between November 2019 and May 2020.

#### Data Analysis

For analyzing data, a multiple-stage approach was followed including the following steps (Fig. 1):

- 1. **First-order Coding Process:** To allow systematic analysis of the multiple data sources, a coding process was used to organize information in codes and facilitate content analysis (Bazeley and Jackson 2013; Braun and Clarke 2013). Therefore, literature related to social legitimacy was read for generating codes. Each of the elements gathered from the literature review constituted an initial list of codes. This analysis identified 19 first-order codes, which are detailed in Table 5 including the main references considered for each.
- 2. Case-Study's Data Analysis: A triangulation process was used to analyze each of the cases: (1) more than 30 h of interviews were audiotaped and transcribed, resulting in almost 500 pages of text, (2) the authors read the interviews to develop a narrative of critical factors related to social legitimacy processes within PPP programs, which has been recommended as a relevant stage before qualitative analysis (Biygautane et al. 2019), and (3) through the lens of the first-order codes, a content analysis of legislation, contracts, and interviews was done. The legislation review focused on understanding the intended roles of stakeholders and the regulatory environment established for each country at a program level. The contract review allowed the authors to identify the intended processes, roles, rights, and responsibilities of the stakeholders for each of the projects at a project level. Next, an exhaustive analysis of the interviews' transcripts revealed the actual performance of the PPP programs. For the analysis process, NVivo 12 was used (Bazeley and Jackson 2013).
- 3. Second-order Coding Process: Once the case data were analyzed based on the first-order codes, an aggregation process was conducted for building the second-order codes in an inductive way. Challenges related to the impacted stakeholders' participation within the PPP programs were labeled as *Social Involvement Issues;* challenges associated with impacted stakeholders' trust were coded as *Distrust between Responsible and Impacted Stakeholders;* and challenges linked to user-payment implications for social legitimacy in PPP programs were named *Lack of Social Criteria within the Toll Tariff Policy.* Table 5 summarizes the first- and second-order codes, the main references taken into account, and some illustrative quotes from interviewees.

2nd-order codes	1st-order codes	References	Illustrative quotes
1. Social involvement issues	<ul> <li>Prior consultation process</li> <li>Communication</li> <li>Social inclusiveness</li> <li>Stakeholders' timing of engagement</li> <li>Participation in decision-making</li> <li>Lack of mutual interest</li> <li>Responsible stakeholders' optimism bias</li> </ul>	[1], [2], [3], [4], [5] [6], [7], [8] [6] [8], [9] [6], [10], [11] [6] [8], [12]	<b>CHR2:</b> "Many people believe that prior consultation is to ask the private party for more things, so they go to the concessionaire instead of the State from the implementation phase to demand more."
2. Distrust between impacted and responsible stakeholders	<ul> <li>Responsible stakeholders awareness</li> <li>Impacted stakeholders' rights</li> <li>Social opportunism</li> <li>Lack of responsible stakeholders' will</li> <li>Public sector's centralization</li> <li>Use of coercive power</li> </ul>	[6] [13] [11], [12] [6] [14] [15], [16]	<b>CR2:</b> "The communities charge the project for the historical abandonment by the State. False communities appear suddenly. That kind of situation is quite difficult to manage."
3. Lack of social criteria within the toll tariff policy	<ul> <li>Revenue guarantee</li> <li>Cost overrun risk</li> <li>Site acquisition risk</li> <li>Social opposition risk</li> <li>Demand risk</li> <li>Toll tariffs</li> </ul>	[12] [12] [3], [17] [3], [14], [17] [3], [12], [17] [15]	<b>CR3:</b> "Users have no alternative roads and that is a big difference from other countries. Therefore, you can put tolls, but the people will quickly reveal if they think the tolls are excessive."

Note: [1] (Dansoh et al. 2020); [2] (Amadi et al. 2018); [3] (Yescombe and Farquharson 2018); [4] (Reeves 2013); [5] (Priemus et al. 2008); [6] (Benítez-Ávila et al. 2018); [7] (Zhang et al. 2009); [8] (El Asmar et al. 2013); [9] (Caldwell et al. 2017); [10] (Van Gestel et al. 2012); [11] (Levitt et al. 2009); [12] (Dewulf and Garvin 2020); [13] (Derakhshan et al. 2019); [14] (Levitt et al. 2014); [15] (Matos-Castaño et al. 2014); [16] (Biygautane et al. 2019); and [17] (Nguyen et al. 2018).

In order to validate the established codes, a structured grouping strategy was followed. There were assigned roles to the authors: the first three authors were the analysts, and the last author (i.e., the most experienced researcher) was the supervisor. The second author was an analyst for the Colombian case, the third author was an analyst for the Chilean case, and the first author was an analyst for both cases. The role of each analyst was established according to their expertise. The analysts reviewed the legislation, contractual documents, and transcripts, in line with the first-order codes, and established the second-order codes for the challenges of social legitimacy. Each of the authors checked every single first-order code. If there was a disagreement among the analysts, the discrepancies were discussed. In case of remaining discrepancies after two rounds of discussion, all authors (including the supervisor) further discussed the discrepancies until achieving a consensus.

# Findings

Based on the data analysis, three main sets of challenges for achieving social legitimacy in road PPP programs emerged at the

institutional environment level that envelopes social consultation for PPPs (i.e., legal framework), at the level of the organizations that participate in implementing PPPs (i.e., stakeholders), and at the PPP program's level (i.e., pricing policy) (Table 6). These challenges are presented and further elaborated upon in more detail in the following subsections.

#### Challenge Group 1: Social Involvement Issues

Social legitimacy is conditioned by the perception of the impacted stakeholders about how much their concerns and interests are taken into account in the decision-making process, as determined by the social consultation process established in both countries' national legal frameworks. The consultation process is essential for social legitimacy, given that this is the first communication channel between the impacted and responsible stakeholders. Despite the significance of this process, interviewees from both countries declared that the current social consultation process is a significant challenge because of its multidimensional fragmentation.

The first dimension of this challenge group is related to poor legislation enforcement (D1.1). The legal framework analysis

**Table 6.** Social legitimacy challenges

Challenges	Level	Dimensions	Colombia	Chile
1. Social involvement issues	Institutional	D1.1 Poor legislation enforcement	Х	X
		D1.2 Limited consultation scope	Х	
		D1.3 Lack of a life-cycle perspective	Х	Х
		D1.4 Deficient identification of heterogeneous impacted stakeholders		
2. Distrust between impacted and	Organizational	D2.1 Negative history between stakeholders	Х	Х
responsible stakeholders	0	D2.2 Public sectors' centralization	Х	Х
-		D2.3 Use of coercive power	Х	Х
		D2.4 Impacted stakeholders' opportunistic behavior	Х	Х
3. Lack of social criteria within the	Program	D3.1 Excessive toll tariffs	Х	Х
toll tariff policy	6	D3.2 Optimistic public sector bias	Х	Х
1 2		D3.3 Risks supported by toll tariffs	Х	Х
		D3.4 Tariff versus Service Levels		Х

showed that both countries ratified the International Labor Organization Convention 169 (ILO 169). It formulates the foundations of tribal and indigenous peoples' rights to be consulted when a project affects their cultural heritage and has been extended to local communities (i.e., Chilean Law 19253/1994 and Colombian Law 21/1991). However, there is an absence of an overarching law to establish prior consultation within PPPs in Colombian and Chilean national programs resulting in various decrees, laws, rulings, ordinances, and presidential directives (Table 2). Consequently, the current requirement of prior consultation is based on fragmented legislation that aims to identify and consult local, indigenous, and other ethnic communities in a disintegrated way. As the number of legislation regarding prior consultation increases, the government's capacity for verifying and enforcing laws and norms decreases. The consequence is that impacted stakeholders are not aware of this legislation, and the risk of litigation and claims from them is low. As a public sector interviewee (i.e., CR6) emphasized: "I do not think it is fair to blame the community if the community has not even been informed and has not been consulted."

The second dimension of this challenge group is the limited consultation scope (D1.2). In Colombia, the Constitutional Court has set the standards for prior consultation focused exclusively on ethnic minorities (e.g., afro descendants and indigenous peoples) because of the fragmented legislation related to this topic (i.e., Rulings SU039/1997 and C030/2008). This process is mandatory for PPPs when the Ministry of the Interior identified these communities within the project's geographic area. Although all the PPPs should conduct socialization processes with impacted stakeholders (i.e., EPIT-P-004 procedure for the socialization of infrastructure projects), these processes are diminished because they are not mandatory by a legal framework but only by the public sector's internal procedures. In Chile, the absence of an enforcement law relating to prior consultation has motivated the Environmental Evaluation Service (Servicio de Evaluación Ambiental-SEA) to incorporate citizen involvement for evaluating projects as one of the responsibilities within the Environmental Qualification Resolution (i.e., Supreme Decree 40/2012).

Despite the significant number of decrees, laws, rulings, ordinances, and presidential directives to establish prior consultation applicable for PPPs in Colombian and Chilean national programs, this legislation is predominantly focused on indigenous and ethnic minorities rather than impacted stakeholders that do not belong to these ethnic groups. These impacted stakeholders have a lower involvement because of the weaker enforcement and scope of the consultation. This limited consultation scope can have a larger impact given that road PPP programs analyzed gather single projects up to 500 km in length including heterogeneous local communities that may include a large proportion of impacted stakeholders that do not belong to any ethnic minority.

The third dimension is the lack of a life-cycle perspective for the involvement of impacted stakeholders (D1.3). Currently, in Chile and Colombia, the involvement of the impacted stakeholders is limited to the prior consultation process in the shaping phase. This process is the only mandatory communication mechanism, but it does not cover the entire PPP life-cycle. Communication processes are established formally only in the procurement phase but in the construction and operation phases are non-mandatory and undefined. One Chilean respondent (CHR2) exemplified this interruption in the communication: "Many people believe that prior consultation consists in asking the private party anything, so they go to the concessionaire instead of the government from the implementation phase to demand more." There are no meaningful mechanisms that allow impacted stakeholders to communicate with responsible stakeholders in the remaining phases of the project's life cycle (i.e., implementation and operation phases).

Fragmented communication lasts throughout the life cycle because of the absence of the public sector in the project. Thus, the private sector becomes the only responsible stakeholder interlocutor, diminishing PPPs' social legitimacy. In this respect, interviewees from both countries have highlighted the concessionaires' claims for increasing the public sector participation in the communication processes with impacted stakeholders. For example, one Colombian private sector's interviewee (CR11) commented: "The concessionaires have complained that they are left alone to deal with the communities from the implementation phase." Colombian contractual clauses have also highlighted this challenge because the public sector is considered a mere companion of the prior consultation processes rather than sharing the responsibility of conducting these processes. In contrast, Chilean contractual clauses do not mention prior consultation directly but only the liability of the concessionaire to comply with the requirements of the Environmental Qualification Resolution (Table 7).

The lack of involvement of impacted stakeholders over the PPP life-cycle contrasts with the integrated approach claimed by the PPP project delivery. One of the greatest achievements of the PPP over traditional procurement methods is that it does not merely pay for building the facilities. The payment depends on the service levels achieved throughout the PPP life-cycle. However, there is no requirement for any impacted stakeholders' involvement performance except a tick box for conducting a prior consultation process once in the shaping phase.

Some conflicts over infrastructure projects have raised concerns that communities may tie up projects under the constitutional appeal process, claiming that consultations fail to meet given the

Table 7. Standard contractual clauses related to prior consultation

Country	Concessionaire's responsibilities	Public sector's responsibilities
Chile	The concessionaire will be responsible for the adoption of appropriate measures for the conservation and protection of the environment, and are required to implement all the necessary actions to ensure optimal environmental and territorial management of the concession and comply with the environmental requirements established in the Environmental Qualification Resolution.	N/A
Colombia	The Social and Environmental Management required to execute the interventions will be the Concessionaire's responsibility, who will carry out such work, fully attending to the distribution of obligations and responsibilities established in this Contract. The Concessionaire must undergo consultations with indigenous and afro-descendant communities, and they must follow guidelines under the Applicable Law.	The ANI is required to delegate an official to accompany the Concessionaire in consultation with indigenous and afro-descendant communities and to coordinate with the Ministry of the Interior the necessary procedures to carry out and conclude these consultations when required by law.

undefined process. As a private sector's interviewee (CR11) exposed: "the concessionaires are rushing to make prior consultation processes, which is neither so prior nor so consultative, taking advantage of the situation of COVID-19 and to overcome bottlenecks of prior consultations." Interviewees also highlighted that the intended consultation scope and further social legitimacy are not being reached. Respondents perceived significant underperformance of the social consultation process for impacted stakeholders, as a private sector respondent (CR13) described: "There has also been a problem with the government not socializing so well and the community has not even been informed or consulted properly." One reason for this underperformance is that responsible stakeholders are likely to develop current prior consultation processes in PPPs as a "checking a box." This lack of interest diminishes prior consultation processes to one more requirement established in law or for achieving licensing required for the implementation phase. Private sector Colombian interviewees agreed that adequate communication with impacted stakeholders must be motivated by a real interest in their concerns rather than fulfilling a requirement most quickly. This misbehavior jeopardizes the meaning of prior consultation and reduces the adequate involvement of impacted stakeholders, making it challenging to social legitimacy.

The fragmented identification of impacted stakeholders (D1.4), which is the fourth dimension, jeopardizes the prior consultation process in the shaping phase. This fragmented identification is a significant challenge because the impacted stakeholders are a wide arrangement of persons and social organizations with dissimilar backgrounds and even settled hundreds of kilometers from the project site, requiring significant effort for proper identification in PPPs. Interviewees recognized that some impacted stakeholders are beyond the project itself. The identification processes of impacted stakeholders must be expanded to include diverse national entities and local governors. Improper identification of this diverse arrangement could undermine persons' legitimate rights and organizations affected by PPP programs. Consequently, social legitimacy relies significantly on an adequate identification process of impacted stakeholders.

Two contradictory views were found relating to the fragmented identification of impacted stakeholders. Interviewees from both countries agreed about the difficulty of properly identifying those who can be considered impacted stakeholders. Several interviewees across both countries recognized the insufficiency of this process, as one Colombian private sector respondent (CR13) described: *"Impacted stakeholders include so many actors that it is impossible to unify them as one group. One community is different from each other.*" Conversely, public sector interviewees in both countries are less aware of this deficit than interviewees from the private sector. This issue was especially prominent in Chile. In fact, only one Chilean public contract manager (CHR4) of the 23 interviewed felt that the identification process was adequate. As a result, it seems that the stakeholder who is responsible for the identification process is the one who is the least aware of this challenge.

Interestingly, the Chilean PPP program demonstrated a better performance in this dimension because of the effective use of the Environmental Qualification Resolution as an overarching mechanism for guaranteeing the communities' involvement in the shaping phase. Conversely, the Colombian PPP program only promotes local communities' involvement in the shaping phase required by internal procedures within the National Infrastructure Agency without further requirement by a higher-level norm. This underperformance in Colombia was reflected in complications related to the prior consultation of one PPP project that must be postponed to the next PPP program (i.e., Mulalo-Loboguerrero). In this respect, one Colombian interviewee (CR6) highlighted: "some projects have great difficulties in prior consultations with communities such as Mulalo-Loboguerrero. There are some belligerent afrodescendant communities with which it has not been possible to complete the shaping phase because of the prior consultation process issues."

#### Challenge Group 2: Distrust between Responsible and Impacted Stakeholders

Social appropriation and desirability are built by impacted stakeholders' mindsets. These mindsets have been shaped by the previous history of collaboration or antagonism between responsible and impacted stakeholders (D2.1). In this respect, the Colombian PPP program has incorporated more significant issues than Chile because of the negative history between the State and some specific communities. Therefore, Colombian public sector interviewees highlighted that local communities often point out historic state abandonment. Consequently, when these communities notice that a PPP project will be conducted, they often behave opportunistically. This implies that there are challenges to PPP social legitimacy that emerge from the perception of impacted stakeholders in previous PPP programs or even before PPP programs' arrival. Often, PPP programs' social legitimacy depends on the historical relationship between the public sector and impacted stakeholders. For instance, one Colombian public sector respondent (CR2) exposed: "The communities charge the project for the historical abandonment by the State. If a community has good access to services, they will not behave opportunistically because they realize that the project benefits them." Therefore, negative precedents in the relationship between impacted and responsible stakeholders are often an obstacle to building momentum, which is required to consolidate social legitimacy. Consequently, this previous history (including previous PPP programs developed) determines the starting conditions of social legitimacy within current PPP programs.

The influence of the negative history between stakeholders on communities' distrust and further opportunist behaviors was found in Colombia rather than Chile. Colombian interviewees highlighted how historic state abandonment shapes an opportunistic mindset in communities. Therefore, underperformance and failures in previous PPP projects are significant challenges for future PPP programs that aim to redevelop these projects. In this scenario, impacted stakeholders aim to blackmail the project by threatening to block the roads and conduct protests if their demands for additional compensations were rejected. Paradoxically, these additional compensations often are paid by the impacted stakeholders through tolls, creating an endless reinforcing cycle of social legitimacy erosion.

This social legitimacy challenge was especially significant in two PPP projects in Colombia. One interviewee (CR7) highlighted: "In 1997 a first PPP project was tendered, but the project was not developed properly. Later, in the last PPP program, a project (Ruta del Sol) was early terminated because it was demonstrated corruption from one company within the concessionaire (Odebrecht). Therefore the project was not completed, but the users paid tolls. Currently, a new PPP is being planned for this road, but the communities are opposed to this project because of the previous history." Another interviewee (CR 9) highlighted: "The community opposes Mar 2 Highway because the previous PPP was not properly developed. This negative precedent is more significant for the community than any promise about the benefits of a new PPP. The community will not believe in (that) promises. It is very important to consider the negative predisposition due to what has happened in previous PPP programs."

The centralized tradition in nonfederalist countries such as Colombia and Chile also triggers distrust (D2.2). Therefore, PPP programs managed by national entities did not guarantee a permanent local presence for allowing relationships between impacted stakeholders and local governments. A Colombian public sector respondent emphasized: "Dialogue with the impacted stakeholders is difficult because as the ANI is a purely central-level entity, impacted stakeholders do not feel they have a close relationship with it." This local presence allows impacted stakeholders a line of communication with responsible stakeholders, which is a necessary step for building trust.

Another relevant challenge is that PPP contractual provisions consider social opposition and protests as risks, which could be addressed using coercive power (D2.3). As one Colombian interviewee (CR2ii) described: "The police go with you to remove the people who are there, and they go to remove them, the communities oppose it arguing that there are an elderly or a child injured." Using this coercive power increases distrust between impacted and responsible stakeholders. Therefore, contractual provisions establish that the concessionaire is responsible for the delays and costs of protesters' occupation rather than advocating for communication channels to solve discrepancies (Table 8). This traditional contractual governance vision jeopardizes social legitimacy creation by eroding trust between responsible and impacted stakeholders. As a result, the communication channels between impacted and responsible stakeholders are diminished since the beginning of the implementation phase. At the same time, contractual governance is focused on outsiders' social opposition rather than building trust between stakeholders.

Impacted stakeholders had shown systematic opportunistic behavior (D2.4), which interviewees across all the sectors highlighted. This opportunism is materialized in the emergence of two different processes that trigger cost overrun risk. This opportunistic behavior was found in Colombia in the shaping phase but not in Chile. People who were not part of local communities took advantage of the planning and prior consultation pitfalls. Impostors sought compensations based on false claims that they had been living on the land for years, hoping to take advantage of the guarantor state's judges and issues in prior consultation processes and project planning. One Colombian private sector interviewee summarized: "There are people who want to take advantage of the difficulty in identifying the impacted stakeholders. Suddenly, people appear out of nowhere and argue that they are harmed by the project even though there is no evidence to support this claim."

Conversely, a different kind of opportunistic behavior was found in Chile compared to Colombia. This behavior occurred after the shaping phase once the concessionaire had been chosen in the tendering process. Consequently, impacted stakeholders would blackmail projects by threatening to block the road and conduct protests if the responsible stakeholders did not accede to those increasing demands for additional infrastructure or economic compensations beyond what was initially agreed. In this respect, one Chilean private sector interviewee opined: "Communities blackmail the project, they raise costs that are transferred to the State. Often, the additional infrastructure demanded by the community as compensation is not feasible because it does not satisfy social cost-benefit criteria."

Ironically, all the claims and blackmails made by local governments, future users, local communities, or (real and fake) landowners are paid by impacted stakeholders themselves, given that these are user-pay road PPP programs. As a result, impacted stakeholder opportunism could create an endless reinforcing cycle of social legitimacy erosion. Public sector interviewees from both countries highlighted how hard it is to make impacted stakeholders understand that they will be the ones to pay in the long run for increasing the project's scope (i.e., increasing toll tariffs or tax contributions required). A Chilean public sector interviewee (CHR2) highlighted: "*It is difficult to make communities and mayors understand that the private sector is not a source of payment. Everything that a mayor asks for, even when he asks for compensation, is not paid by the private sector but by the State. All Chile is paying for it.*"

## Challenge Group 3: Lack of Social Criteria within the Toll Tariff Policy

The users mainly finance toll roads through user payments; thus, toll tariffs and the service levels become the primary economic concerns for impacted stakeholders. In most PPP programs, there is no toll tariff policy with a preestablished mechanism for determining the maximum toll tariff allowed. These toll tariffs do not consider the impacted stakeholders thoroughly but are excessively driven by the public sector's incentive to reduce its subsidies. In this regard, one Chilean private sector's respondent exposed: *"The annual tariff*"

N/A

must insure.

Country	Access to the project corridor lands
Chile	It will be the exclusive responsibility of the Concessionaire Comp safeguard the land and other assets, as well as any delays and cos that may occur during construction as a result of the inability to acce due to the installation of unauthorized constructions or occupation parties, which occurred after the date of delivery of the expropria
Colombia	(xi) The unfavorable effects that the Concessionaire has to incu invasion of the Project Corridor by third parties (is a risk assigne concessionaire), given that the Concessionaire must take the nece measures provided for the Applicable Law for the defense and prote Project Corridor in the proper and timely manner.

(xii) The unfavorable effects derived from all and any losses of the Concessionaire's property caused by third parties other than the ANI (is a risk assigned to the concessionaire), without prejudice to its right to demand from third parties the repair or compensation of the direct and/or indirect losses when applicable.
(xviii) The effects derived from the total or partial destruction or theft of the goods, materials, and equipment of the Concessionaire).
(i) The liability exemption event does not include a strike, riot, civil and/or mass unrest, malicious acts by third parties, terrorism, which are risks that the Concessionaire

Losses caused by third parties

increase in the Santiago City Urban Highways was CPI+3.5% per year. In a 30-year contract, this increase is madness. Nowadays, people pay excessive prices for using these urban toll roads. A part of the massive social movement protesting in Chile in 2019 was specifically focused on not wanting to pay more for using the highway." This liability is exacerbated in both PPP programs by excessive toll tariffs (D3.1), optimistic public sector bias (D3.2), risk management that is supported by toll tariffs (D3.3), and service levels achieved (D3.4).

The public sector develops the toll pricing policy under the main priority of reducing public sector funding as much as possible, which was emphasized by interviewees across all the sectors in both countries. A Chilean public sector's interviewee (CHR6) emphasized: "While significant increases of tariffs allowed for reducing state subsidies, it resulted in the renegotiation of these tariffs due to social opposition. If toll tariff policy is not balanced, it can be bread for today and hunger for tomorrow. High toll prices can have social and political consequences and can discredit the PPP program." As a result, the yearly increase of tariffs was significant in both countries and can result in unsustainable toll prices, eroding road PPP programs' social legitimacy. For example, unsustainable toll prices failed one Colombian PPP road (i.e., Guajira-Cesar PPP) because the impacted stakeholders did not allow for installing the intended new tolls.

Establishing top limits on toll tariffs is necessary for avoiding the natural bias of public project managers for prioritizing the reduction of public subsidies through the life-cycle of PPP projects. This social legitimacy challenge triggers noticeable consequences in the Colombian PPP program. Therefore, unsustainable toll tariffs failed one PPP project (i.e., Cesar-Guajira) because of the opposition of impacted stakeholders to installing the intended new tolls. One interviewee (CR6) highlighted: "In this project, the community did not accept new tolls. Given that 80% of the income comes from toll revenues, the PPP had to reach an agreement for early termination." Another interviewee (i.e., CR8) complemented: "Establishing more than three tolls in one of the poorest regions in the country is not going to work in any way."

According to interviewees from both countries, optimistic public sector bias is one meaningful trigger of excessive toll tariffs. In this respect, one Colombian public sector respondent (CR13) indicated: "There are optimistic forecast biases in both costs and toll revenues. There may be biases to estimate higher toll revenues than what is realistic, but there are also biases towards unrealistically low budgets." Therefore, financial projections of PPPs are often affected by the optimism bias of the public sector. As a result, the public sector is likely to miscalculate the impact of tariff increases on impacted stakeholders and make unrealistic optimistic assumptions.

Consequently, traffic forecast optimism bias triggers increasing economic gaps for projects when the real traffic is less than projected (i.e., CR7). Additionally, the optimistic bias in the budget of the risks shared or allocated by the public (e.g., land acquisition, environmental risk, and connections to the site) can impact toll tariffs negatively and, consequently, erode social legitimacy. A Colombian private sector's respondent (CR7) highlighted the awareness of the public sector of the social legitimacy implications, exposing: "The previous government was very clever because it established the first compensation for traffic gaps in the PPPs within the current program in year 8 of operation because it knew that the next government must deal with the problem of optimistic traffic projections." Moreover, two additional risks were identified that could exacerbate toll tariff increases. First, both governments bore demand risk by guaranteeing revenues for the private sector if traffic is lower than expected (Table 9). As a result, impacted stakeholders will be forced to carry the risk either directly or indirectly. Second, both PPP programs' contractual clauses allow for the concessionaire's compensation for some risks through additional toll tariff increases.

Once these risks are materialized, users can be affected by either increasing toll tariffs, increasing concession periods, or increasing taxes. In turn, an interviewee from the Colombian private sector suggested that there are political drivers in designing mechanisms for compensating demand risk, such as establishing the periods for compensating traffic gaps to the concessionaire in the next presidential period. As a result, interviewees from both countries explained that the public sector's tolling policy had been driven by reducing future public payments and low demand elasticity given the noncompeting clauses (i.e., there is no alternative road in several cases). In the end, the public sector's funding priorities undermine the social impact of excessive annual tolls. This absence of the social criteria tariff design is a relevant challenge to social legitimacy and decreases trust between impacted and responsible stakeholders.

Risk	Chile	Colombia
Demand risk	<b>Distribution of demand and collection risks</b> A Minimum Income Guaranteed (MIG) mechanism allows for the distribution of the risks derived from the uncertainty regarding the number of vehicles that will circulate through the Collection Points and that will pay their rate during the operation.	Main obligations of the ANI during the operation and maintenance stage In years 8, 13, and 18, if the concessionaire has not achieved its corresponding Present Value of the Toll Collection, the difference is calculated, and the ANI will reimburse the gap to the concessionaire. If by the 25th year the concessionaire has not met its present value of the toll collection, the concession period of operation can be extended until the 29th year.
Toll rate increase	<b>Suspension of the concession</b> The indemnities that proceed to compensate the concessionaire, if it has suffered damages, may be expressed in an increase in the concession period, State contributions, rate increases, or any other factor of the economic regime of the contract.	<ul> <li>Risks assigned to the ANI</li> <li>The unfavorable effects of modifications to the rates provided for the Toll Resolution, the implementation of differential rates in the existing Toll Stations and/or new Toll Stations, on the roads that are part of the Project. To offset the Value of the Materialization of this Risk, the Mechanisms for Risk Compensation will be used.</li> <li>Mechanism to increase toll stations and rates</li> <li>Compensation for Risk will be recognized to the Concessionaire by increasing the rates of the Toll Stations and/or the installation of additional toll stations that allow the Concessionaire to obtain the Present Value of the Toll Collection.</li> </ul>

Note: Bold type indicates the titles of the clauses in the contracts.

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The underperformance in the relationship between payment and service level has been a significant social legitimacy challenge found in the Chilean rather than the Colombian PPP program, especially in the urban concessions. The intended purpose of the toll tariff policy in urban concessions was to increase tariffs in the higher congestion time frames to discourage users from using these roads in these time frames and reduce congestion. Nevertheless, interviewees highlighted that the intended self-adjustment of demand in peak hours and high congestion periods did not work, which triggered most of the users to pay the highest tariffs for the worst service levels. One Chilean private sector interviewee (CR7) described: "On the Urban PPPs in Santiago, significant surcharges were established at peak hours and when congestion occurs to discourage the use of road when there was excessive traffic. However, the strategy did not work because users continued using the road. Users end up paying much more in exchange for worse service, and also the PPP lost revenues because as the mean speed is slower 3 o 4 h per day, fewer cars circulated, so everyone lost." In addition, national governments had to renegotiate tariffs for all urban road PPPs within the Chilean capital due to user discontent concerning the excessive periodic raising of congestion prices, even when the travel time decreased over time. The latter case is especially significant because the pricing policy implied an annual increase of 3.5% over the consumer price index (CPI). As a result of massive protests, toll prices were renegotiated.

Overall, these three groups of challenges depicted are interwoven. Predisposed negative mindsets by impacted stakeholders against responsible stakeholders can trigger distrust and social opportunism. This distrust, in turn, led responsible stakeholders to conceive that impacted stakeholders were a risk, and the former aimed to reduce the influence of the latter in making decisions within the prior consultation processes. Therefore, impacted stakeholders are not thoroughly taken into account when designing toll tariff policies. Finally, significant tariff increases jeopardize trust and trigger riots and protests.

#### Discussion

This study contributes to the PPP body of knowledge by providing a multilevel analysis of the challenges for gaining social legitimacy in user-pay PPPs in two programs. The analysis reveals challenges related to PPPs' institutional, organizational, and program levels and requires a triadic stakeholder perspective to deal with them. In the following, these findings are further discussed.

At the institutional level, this study demonstrates that an unbundled and heterogeneous PPP consultation process leads to an improper identification and involvement of impacted actors. This misbehavior inhibits the development of proper governance mechanisms between responsible and impacted stakeholders over the PPP life-cycle. Consequently, results suggest that the value perception of impacted stakeholders can be enhanced by reshaping their role in the PPP institutional framework. The institutional framework should transform the traditional dyadic governance schemes into triadic schemes considering impacted groups as internal stakeholders within PPP programs rather than externalities. This complements and specifies Kivleniece and Quelin's (2012) argument that transportation PPPs create value by combining public sector oversight and private partners' operational and management skills.

Accordingly, maximizing value creation in road PPPs requires a stakeholder management perspective from the public and private sectors that incorporate impacted groups as a stakeholder typology within the PPP institutional framework. This means that responsible stakeholders should make value propositions to impacted stakeholders beyond infrastructure provision requirements. To do so, public and private sectors should give this stakeholder group a more prominent role in key decision-making processes across the PPP life cycle. This can be done through a process aiming for identifying impacted stakeholders, establishing their key interests, building a mutually agreed communication strategy, and conducting a frequent assessment of the stakeholder management process based on mutually agreed performance indicators.

At the organizational level, the absence of triadic relational governance mechanisms between impacted and responsible stakeholders combined with opportunistic behaviors of impacted groups jeopardizes the development of a shared vision required to boost PPP programs' social legitimacy. Extant PPP governance literature adopting a dyadic perspective has emphasized the role of relational governance in addressing the governance challenges between the public and the private sectors that isolated contractual governance cannot overcome (Benítez-Ávila et al. 2018, 2019). This study further demonstrates that governance limitations affect the triadic relationship between the public, the private, and the impacted stakeholders. Previous research has already proposed the integration of third parties within the PPP governance scheme for enabling the capacity of PPP (Jooste and Scott 2012) but focused on enabling organizations (i.e., advocacy associations and nonprofit organizations) rather than impacted stakeholders. This research shows that relational governance should be addressed in a triadic perspective, including impacted stakeholders to increase social legitimacy in PPP programs and eventually value creation for the public and the private sectors due to reducing uncertainty and social risks. Consequently, triadic governance mechanisms, such as trust and relational ties, between responsible and impacted stakeholders are necessary for achieving social legitimacy.

There is, however, a trade-off between trust among the public and private sectors and social legitimacy mediated by the contractual governance. Risk literature suggests that social opposition risks should be managed by the public sector rather than sharing or transferring to the private sector because of its exogenous nature (Chan et al. 2011; Yescombe and Farquharson 2018). The risk allocation pattern is considered relevant for creating trust between the public sector and private organizations but, simultaneously, generates the private sector's disinterest and negligence regarding social concerns. While Henisz et al. (2012) conclude that the "effectiveness of relational contracting can be an important complement to neoclassical contracting," this paper complement this perspective by acknowledging that the effectiveness of relational contracting between impacted and responsible stakeholders is also restricted by current contractual mechanisms when the private sector is not liable for social risks.

At the program level of user-pay PPPs, neglecting the economic conditions of users and the allocation of risks to them in terms of additional tariff increases or flexible term concessions will lead to social activism. Previous research emphasized social activism as a mechanism for directly redistributing value from the private sector at the project level, especially in autonomous PPPs such as toll roads (Kivleniece and Quelin 2012). Conversely, this study demonstrates that the intended purpose of social activism for restraining private value capture in PPPs is only achieved at the program level because of the current contractual governance mechanisms. Revenue underperformance risks are used to be borne by the public sector through contractual mechanisms such as minimum income guarantees or flexible terms. The former mechanism allows for public compensations when revenues are lower than projected (Vassallo and Soliño 2006). The latter mechanism allows for extending the concession period when revenues are below the projections, implying that the users will pay more years than projected

(Engel et al. 2001). In Colombia, the early-terminated PPP resulting from the social activism against tolls implied a significant financial compensation for the private according to the contract clauses. In Chile, expost toll tariff renegotiation in the urban toll road PPPs achieved by the social mobilization movement was compensated by the government rather than the private sector. However, long-term social legitimacy erosion has triggered increasing political activism to change value redistribution for upcoming PPP programs. In Colombia, the new toll road PPP program, which will bid the first project in 2021, imposes higher requirements on the private sector by eliminating flexible terms, higher environmental requirements, and additional complementary work for responding to social activism claims made during the 10-years-period of the current PPP program (Burgos 2020).

The traditional service-fee payment mechanisms in road PPPs inhibit social legitimacy because these procedures are strongly based on considerations associated with service levels, neglecting social performance indicators. Managerial efforts for creating social legitimacy are hindered due to the absence of social performance-based indicators in payment mechanisms. For instance, key relational governance mechanisms for building social legitimacy, such as social control, are impeded by the least present value of revenues payment mechanisms, which was theoretically proposed and implemented by Chilean scholars in the 1990s (Engel et al. 1997) and have been widely promoted in Chile and Colombia (Carpintero et al. 2015). Consequently, social control is not capable of effectively restraining private value capture at the project level, as Kivleniece and Quelin (2012) proposed.

## **Implications for Practice**

To address the challenges found, two potential strategies for enhancing social legitimacy in PPP programs are proposed: building relational governance and social criteria within toll tariff policy.

#### **Building Relational Governance**

Relational governance in long-term contracts can be built by integrating two main elements: trust and relational norms. Colombian interviewees (e.g., CR8) recognized the need for responsible stakeholders to guarantee frequent visits and develop shared goals with impacted groups in order to build trust. Interorganizational trust must be created by responsible stakeholders through involving impacted stakeholders' organizations (i.e., business associations, neighborhood organizations, and industry organizations) as Chilean interviewees claimed (i.e., CHR6). Therefore, design and planning meetings should include strategic representatives of the impacted stakeholders as identified through in-depth analysis of their internal interactions. However, to develop interpersonal trust, it is necessary to implement noncontractual governance mechanisms such as informal meetings and cross-functional teams that create personal networks among the stakeholders around mutual reliability. Due to the disperse and heterogenous conformation of impacted stakeholders, such informal encounters may facilitate wide participation of impacted groups, as most of the studied projects exceed 100 km in length, and some of them even exceed 300 km length, implying that meetings should be conducted locally for achieving a meaningful trust-based involvement of impacted stakeholders.

To boost social legitimacy, relational mechanisms based on twoway communication processes, collective decision-making procedures, solidarity, and flexibility should be developed. This means that improving social legitimacy requires an analysis of PPP projects beyond developing road infrastructure facilities. Colombian interviewees (e.g., CR8) highlighted that responsible stakeholders must demonstrate genuine interest in impacted stakeholders' interests and needs in order to gain social support for PPP programs. Interviewees (e.g., CR13) also emphasized the need for early inclusion of impacted stakeholders in decision-making procedures in order to properly address social concerns and reduce their potential intransigency toward PPP projects. Overall, a credible government commitment focused on recognizing impacted stakeholders' rights and concerns improves social legitimacy through agreed problemsolving mechanisms (CR8, CR9, and CR13).

#### Social Criteria within Toll Tariff Policy

There are two sets of strategies for building social criteria within the toll tariff policy, namely, increasing alternative sources of payment and reducing costs. Increasing alternative sources of payment implies redistributing payments from users to other social sectors or economic domains, such as local communities (i.e., land value capture mechanisms), vehicle users (i.e., heavy vehicle use taxes, truck and trailer sales taxes, tire taxes, vehicle excise taxes, and gas or fuel taxes) or the general public (i.e., property, sales, and income). Interviewees (e.g., CR2, CR10, and CHR6) recommended suitable alternative sources such as selling stakes of nonstrategic stateowned companies. On the other hand, costs can be reduced by lowering the project's scope during the shaping phase, avoiding sunk costs, and achieving value for money, as interviewees (e.g., CR10) proposed. Cost reductions can also be achieved by lowering service levels to an acceptable minimum or reducing rehabilitation and maintenance costs, as some interviewees (e.g. CR7) emphasized.

#### Conclusions

By adopting a multiple-case study approach, this research studied the challenges of achieving road PPP programs' social legitimacy. It contributes to the PPP body of knowledge by redirecting the discussion from overall legitimacy to social legitimacy challenges and including the impacted stakeholders in the PPP programs' governance scheme. This novel perspective on the legitimacy of PPPs showed that achieving social legitimacy requires the extension of governance schemes from the current dyadic perspective restricted to responsible stakeholders to a triadic governance scheme considering impacted stakeholders as an important group within PPP projects rather than an externality.

This study revealed three significant groups of challenges that must be addressed to achieve social legitimacy in user-pay PPP programs: (1) social involvement issues, (2) distrust between impacted and responsible stakeholders, and (3) lack of social criteria within the toll tariff policy. It demonstrates that the social value creation and the impacted stakeholders' perception of such value also require more engaged forms of integrating impacted stakeholders in key making-decision processes not only based on the current consultation. Such a triadic governance perspective will ensure value creation of road infrastructure because social risks and uncertainty will be reduced and social acceptance of PPPs increases. Particularly, relational governance mechanisms should be mobilized to boost the social legitimacy of PPP programs.

A broad implication of this paper is the exposition of the myriad of challenges that need to be dismantled by using specific strategies to trigger social legitimacy in PPP programs. Understanding these challenges and the strategies for overcoming them is necessary for creating social value in PPP programs in both developed and developing countries. This study also challenges the traditional dyadic perspective among responsible stakeholders in PPP governance. It shows the relevance of impacted stakeholders not only for prior consultation processes in the shaping phase but also during the entire life cycle of PPPs. Such long-term stakeholder involvement becomes essential for creating PPP value in an increasingly complex environment.

#### Limitations and Future Research

This study has limitations. First, given that neither of the PPP programs analyzed had attained an optimal social legitimacy, it was not possible to obtain an ideal counterfactual example of social legitimacy to contrast. Moreover, a suitable counterfactual example is even conditional to institutional and regulatory common environments such as being unitary rather than federalist governments, which implies that countries such as the United States, Canada, Mexico, Brazil, Argentina, Germany, India, and Australia were not suitable referents. Additionally, only countries whose road PPP programs rely on user payments would be suitable, resulting in dismissing countries such as the Netherlands, the United Kingdom, and Belgium, which are mainly based on availability payments models. Second, despite comparing two current national road PPP programs, these programs had begun almost 10 years ago, meaning that PPP projects had finished the shaping phase. However, not all of them have completed the implementation phase, and none have finished the operation phase. Future research could benefit from studies focused on PPP programs whose projects have finished the implementation or operation phase to contrast this study's findings. Third, this multiple-case study was developed on two mature markets in developing countries. Comparative analysis of developed and developing PPP programs could be fruitful for establishing further theoretical contributions. Fourth, this research was focused on toll road PPP programs. It could be contrasted in future research with different PPPs such as availability payment or shadow tolls for understanding the implications of nonuser payment models in the social legitimacy of PPP programs. Fifth, future research could benefit from studies, including nonroad infrastructure such as social PPPs.

# **Data Availability Statement**

Some or all data, models, or codes that support the findings of this study are available from the corresponding author upon reasonable request.

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