The Battle for TNCs in Latin America: Regulatory Trends and Policy Challenges to the Regional Expansion of Ride-hailing Platforms

A batalha pela ERT na América Latina: tendências regulatórias e respostas políticas à expansão regional das plataformas de transporte privado

La batalla por las ERT en América Latina: tendencias regulatorias y respuestas de política ante la expansión regional plataformas de transporte privado

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Abstract: Over the past decade, the proliferation of Transportation Network Companies (TNCs) such as Uber, DiDi, and Cabify has ignited a regulatory battle, significantly disrupting urban mobility landscapes and legislative debates across Latin America. Despite extensive research on labor conditions triggered by the gig economy, there remains a critical need for a detailed, comparative-empirical analysis to understand ride-hailing platforms as sociotechnical assemblages reshaping regional policy environments. This study delves into the evolving regulatory trends influenced by the adoption of ride-hailing services in various Latin American countries, highlighting the diversity of approaches and identifying common patterns in adapting political and legal frameworks to platform capitalism. Employing a mixed-methods approach, we introduce the "Transportation Network Companies Regulation Index for Latin America" (TNCRI-LA), which aims to categorize policy responses based on regional regulatory frames, offering a novel empirical lens for comparative platform regulation studies. We conclude by discussing these findings with expert insights to understand better contexts and challenges for platform regulation across Latin America, thereby providing a comprehensive guide for future research and policy-making and opening paths for in-depth dialogues between regulatory politics and STS frameworks.

Keywords: platform regulation, ride-hailing, gig economy, TNCs, Latin America.

1. Introduction

The historical trajectory of urban transportation shows that technological innovations have consistently faced social challenges, sparking regulatory debates and political disputes within the for-hire vehicle industry (Cooper et al., 2023). The rapid emergence of Transportation Network Companies (TNCs), such as Uber, Lyft, and DiDi, among others, has catalyzed widespread regulatory reform worldwide (Snellen & de Hollander, 2017), transforming the urban mobility discourse and disrupting legislative frameworks, including those in Latin America (Puche, 2019).

The regulation of platforms has become an increasingly critical area of scholarly and policy focus due to the role of big tech corporations and the impact of their sociotechnical artifacts in society, creating a global concern for regulating technology worldwide (Bradford, 2023). Such debate is central to the gig economy critical framework (Woodcock & Graham, 2020). As platforms continually redefine traditional employment and business models, governments and regulatory bodies face the challenge of adapting existing laws and creating new policies that address the digital nature of work (Flew, 2021).

The regulatory approach to digital platforms is underscored by the necessity to address legal gaps such as the classification of gig workers, the role of platforms firms, and defining what constitutes paid work, all of which are contingent upon political choices shaping the present and future of the digital economy (Koutsimpogiorgos et al., 2020). Moreover, regulating platforms also becomes essential for other issues, such as ensuring competitive equity, preventing monopolistic practices, and maintaining consumer protections (Cai, 2020).

Regarding platforms, mobility, and urban transportation, the scholarly literature has extensively explored the regulatory dimensions of TNCs in state-level legislation, indicating the varying regulatory approaches to integrating these services into existing legal frameworks (Collier et al., 2018; Dudley et al., 2017; Moran & Lasley, 2017; Thelen, 2018). For instance, scholars have identified a broad spectrum of issues, including impacts on public transit ridership (Diao et al., 2021), consumer behavior (Li et al., 2019), traffic congestion (Erhardt et al., 2019; Roy et al., 2020), cities sustainability and environment (Ward et al., 2021), and labor rights (Shetty et al., 2022).

Along with those trends, a decade after the arrival of TNCs in Latin America and subsequent transformations in the urban transportation landscape, there also has been a surge in efforts to map and analyze the various societal and political issues triggered by the continuous advance of

ride-hailing platforms in the region. Particularly, regulatory implications garner increasing scholarly attention in inclusive development (Oviedo et al., 2022; Reilly, 2020), labor conditions (Arriagada et al., 2023; Bensusán & Santos, 2021; Dinegro, 2019; Reilly & Lozano, 2019), and governance (del Nido, 2022; Hernández, 2018; Ferreira et al., 2018; Oviedo et al., 2021; Puche, 2019). However, much of the literature that takes a regional perspective focuses on national case studies, particularly those emerging from reports by international financial organizations.

Instances such as the Organisation for Economic Cooperation and Development (OECD), the International Labour Organization (ILO), the Inter-American Development Bank (IDB), and the Economic Commission for Latin America and the Caribbean (ECLAC) are actively promoting policy responses to platform work, focusing on issues such as legal classification, employment quality, social protection, and collective bargaining rights within the gig economy, particularly for ride-hailing and delivery platforms (ECLAC/ILO, 2019, 2021; OECD, 2016, 2019).

Nevertheless, while previous studies have contributed to position those urgent concerns in a region historically plagued by high rates of labor informality and precarious work (Abramo, 2022; Krull, 2016; Oviedo et al., 2021), and despite some critical cross-national efforts (Burlot et al., 2021; Heeks et al., 2021; Puche, 2019), a gap still exists in the systematic comparative-empirical research aimed at deciphering the diverse ways TNCs have redefined the policy environments across the region. This paper seeks to fill this critical void by examining the evolving regulatory trends, identifying legal frames, and classifying converging patterns as Latin American countries struggle with integrating a wide variety of digital platforms into their legislative ecosystems (Bizberge et al., 2023) in a way that responds to the challenges posed by social inequalities in the age of automation (Whitehouse & Brady, 2019).

Thus, following the proposal of Latour (2023), this article is conceived from the dialogue between Science and Technology Studies (STS) and Political Science, considering platforms as "sociotechnical assemblages and complex institutions" (Gillespie, 2018, p. 255) that affect the field of politics and policy-making. This position is crucial due to the impact of the gig economy technologies in the region's diverse socioeconomic and cultural contexts, transforming urban mobility and reconfiguring labor relations, market dynamics, and regulatory structures (Hidalgo & Salazar, 2020). An STS approach to studying platforms in Latin America allows us to delve into diverse urban challenges, economic inequalities, and political frameworks, contextually understanding how platforms reconfigure social, economic, and technological relations (Sued & Zubieta, 2022).

Therefore, this research addresses the evolving regulatory trends that have emerged from adopting ride-hailing services across Latin America. By introducing the Transportation Network Companies Regulation Index for Latin America (TNCRI-LA), this study not only aims to explore the divergent approaches taken by various countries but also to identify common patterns in how political and legal frameworks are adapting to the challenges posed by platform capitalism. The findings offer nuanced insights into the regulatory dynamics reshaping the urban mobility landscape, contributing to a more comprehensive understanding of regional policy adaptations.

The article is structured as follows: The second and third sections explore the context of the expansion of TNCs across Latin America, offering a novel mapping of the presence and operations of platform firms in various countries. The fourth section presents the methodological approach and introduces the TNCRI-LA. The fifth section presents the index results and proposes a typology for analyzing current regulatory trends in countries of the region. The final section discusses the current challenges in regulating platform firms, integrates the findings with expert insights, and concludes with implications for policy-making and suggestions for future research.

2. Exploring the Dynamics of TNC Expansion in Latin America

The emergence and development of shared urban mobility have long been a point of contention in Latin America. Only recently has this topic begun to be explored within the social history of transportation, marking a significant shift in academic focus (Chastain, 2021; Dienel & Vahrenkamp, 2018). In the second decade of the 21st century, this conflicting trend continues, now aligning with profound transformations brought about by platform capitalism.

Consequently, understanding the penetration of TNCs in the region requires an examination of a complex interplay of circumstances. These factors include the structural conditions of labor markets, geopolitical dynamics, and political decisions that have supported the consolidation of platform business models, helping to explain the expansion of this business model and illuminate the circumstances that have propelled its growth despite resistance from the traditional transport industry and legal gray zones (Bensusán & Santos, 2021).

Throughout the 2010s, the global wave of emerging transportation alternatives was significantly propelled by the widespread adoption of smartphone technology and broadband mobile connectivity. This digital transformation enabled the rapid proliferation of mobile transportation apps, fundamentally altering the urban mobility landscape. This shift was particularly pronounced in Latin America, with mobile connectivity becoming the primary Internet access method for

approximately 380 million users, boasting an urban penetration rate of around 60% (GSMA, 2022). This widespread digital adoption laid the groundwork for the region's rapid acceptance and expansion of TNCs.

In addition, Latin America has experienced unprecedented urban growth in recent decades, leading to increased urbanization, an overwhelmed public transportation infrastructure, and a surge in private automobile ownership (Calatayud et al., 2021). This rapid urbanization introduces significant challenges, including inadequate urban planning and limited mobility options, compelling residents to rely heavily on personal vehicles (Azuara et al., 2019). The convergence of these urban challenges with technological advancements in mobile connectivity has created a fertile ground for TNCs (Oviedo et al., 2021). These platforms present themselves as a timely solution to the region's transportation inefficiencies, providing an alternative that is convenient and adapted to the urban population's evolving digital habits (Cockayne, 2016).

By 2020, more than half of all public transportation trips in Latin America were managed by semiformal and informal services (Tun et al., 2020). The prevalence of these informal practices vividly illustrates how deeply they are ingrained in the local transportation ecosystem. The widespread reliance on these services highlights the region's practical responses to urban transport challenges and signals urgent needs for policy and infrastructure enhancements.

This widespread informality, set against a backdrop of congested and often inefficient public transportation systems, has historically left a significant portion of the population, especially those residing away from major urban centers, with limited access to reliable transportation (BID, 2011). Oviedo et al. (2023) have found evidence indicating that negative experiences and perceptions of public transportation may increasingly lead individuals to rely on TNCs. This situation presents a paradox where ride-hailing platforms offer alternatives to local deficiencies and profit from systemic issues within Latin American public transportation infrastructures. This dual role highlights the complex interplay between evolving urban mobility services and the need for comprehensive public transportation improvements.

Furthermore, platform firms employed a strategy of entering markets with low fares, offering differentiated services, and providing alternative payment methods, often promoting negative perceptions of traditional taxi services (Burlot et al., 2021). The innovative business models of these platforms, coupled with a lag in regulatory responses, allowed them to solidify their presence in a legal grey area despite facing opposition from established taxi sectors. The ensuing

conflicts between TNCs and traditional taxi services have varied in intensity across contexts and cities, underscoring the challenges of adapting regulatory frameworks to accommodate these new entrants (Olivarría & Sánchez, 2021; Sáenz & Sánchez, 2021).

This scenario underscores the complex dynamics as Latin America discoursive power of the gig economy platforms around innovation and accessibility (Pangrazio et al., 2021), facing ongoing challenges with regulatory alignment and equity considerations. These issues highlight the intricate and often contentious interactions between emerging transportation technologies and established urban infrastructures.

Under this general context, the arrival of TNCs offering on-demand ride-hailing services through smartphones not only found a niche for establishment in a market of millions of users, but they also took advantage of the conditions of informality and unemployment, deepened in the years following the recession, to position itself as an alternative source of economic activity for essential segments of the population (Da Silva & Núñez, 2021).

For instance, by 2018, Uber, the well-known Silicon Valley platform pioneering the global ride-hailing market, reported having over 25 million monthly active riders and operating in more than 200 metropolitan areas across 15 countries all over Latin America, underscoring its profitability and the substantial volume of trips (Moed, 2018). Accordingly, the platform's market expansion in recent years has been reflecting the broader implications of international involvement in the region's Transportation Network Company (TNC) landscape. Such expansion raises critical questions about competition, regulatory adaptation, and the geopolitical impacts of global platformization (Puche, 2019).

The Chinese involvement in the Latin American telecommunications and platform landscape, often called 'The Extension of the Digital Silk Road' (Malena, 2021), symbolizes both the opportunities and complexities such foreign engagement introduces. For instance, China's commercial relationships have significantly influenced the gig economy's growing market of providers and users in the region (Ellis, 2022a). The expanding presence of the Chinese ride-hailing company DiDi Chuxing, established in 2012, is particularly notable. Its acquisition of the Brazilian ride-hailing app 99 in 2018 represents a pivotal moment of influence. This strategic move challenged major competitors like Uber and significantly expanded DiDi's market presence, boosting its share by 30% in cities outside Brazil, where it commenced operations (Trevisan, 2021).

This context sheds light on China's expanding influence in the region. Particularly concerning the ride-hailing sector through DiDi Chuxing's operations, US government officials have assessed the geopolitical and security implications of Chinese investments in critical infrastructure sectors across the region, focusing on national sovereignty and security interests (Ellis, 2022b).

Additionally, the “geopolitics of platforms” paradigm (Gray, 2021) continues to perpetuate the asymmetric position of Latin America by facilitating the regional operations of large tech companies without adequate supervision standards or regulations. This dynamic underscores the region's unequal standing, bringing to light common concerns such as “extractivist economic models, unfair labor practices, technical services evolving into markets, the absence of a regional approach to data protection, corporate lobbying for the adoption of soft laws, institutional weaknesses, and dependence on foreign technologies” (Ricaurte et al., 2024, p. 3).

3. Mapping the Landscape of TNC Operations across the Region

Mapping the landscape of TNCs presents significant methodological challenges. These difficulties stem primarily from the limited availability of public data, corporate secrecy, and the tendency of existing reports to focus narrowly on local scopes (Sannon et al., 2022). Additionally, the governance of gig work under platform capitalism involves a complex process known as "dual value production" (van Doorn & Badger, 2020), where the monetary value of the services provided is augmented by the speculative value of data produced during these services.

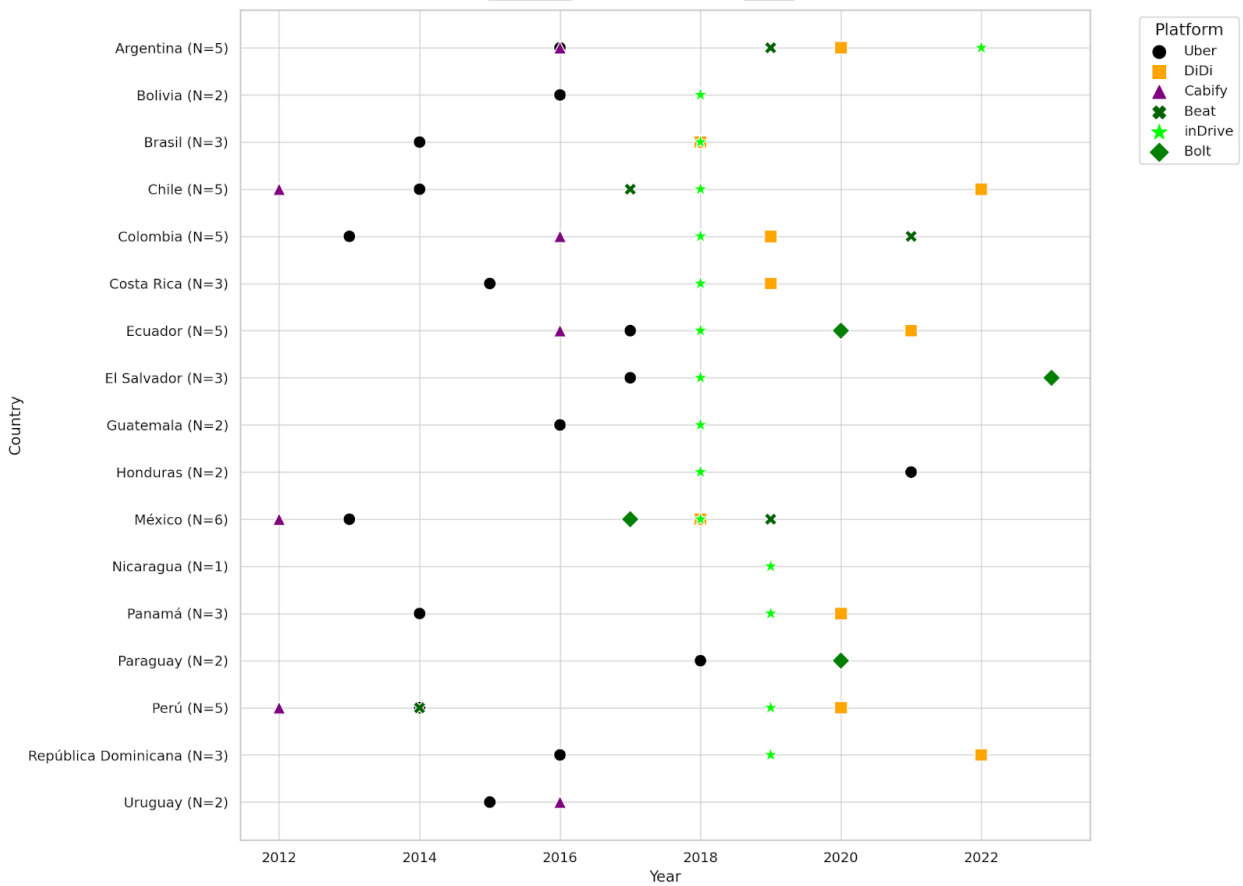
This multifaceted data production and control approach within platforms creates significant barriers to transparent research and understanding of platform operations. As a result, these factors complicate efforts to comprehensively map the gig economy landscape, highlighting the need for innovative methodologies to penetrate the opacity of platform ecosystems.

In the case of Latin America, while significant efforts like the Latinobarómetro public opinion surveys have attempted to capture the usage of ride-hailing apps, inconsistencies and gaps in data collection over time have complicated the development of comprehensive regional indicators (Azuara et al., 2019). For instance, the 2018 and 2021 Latinobarómetro surveys included questions about platform utilization in the region. Specifically, the 2018 survey focused on using ride-hailing platforms for generating income (workers' dimension), while the 2021 survey inquired about app usage patterns (users' dimension). However, the 2023 survey no longer includes questions related to either dimension, posing substantial challenges for ongoing monitoring and regional comparisons (see Corporación Latinobarómetro, 2018, 2021, 2023).

The need for more reliable data has become a complex panorama for comparative research, but it also affects policy development and urban planning (Circella & Alemi, 2018). Moreover, the evolving landscape of ride-hailing services is giving rise to alternative platforms, marking significant nuances to the conventional market platform monopolization trends observed worldwide (Flew, 2021). The recent launching of local platforms like Pronto, Yabü, Isco, or Fory have carved niches within specific Mexican and Colombian cities, respectively, presenting a stimulating but incipient alternative to the prevalent market hold of large transnational TNCs.

However, when taking a look at diverse sources like news outlets, scholarly research (Puche, 2019), and app download analytics (SensorTower, 2023) reveals a clear prevailing dominance by six principal entities in the Latin American market over the last decade: Uber, DiDi, Cabify, inDrive, Beat, and Bolt (Figure 1).

Figure 1. Evolution of TNC presence in Latin American countries, 2012-2023



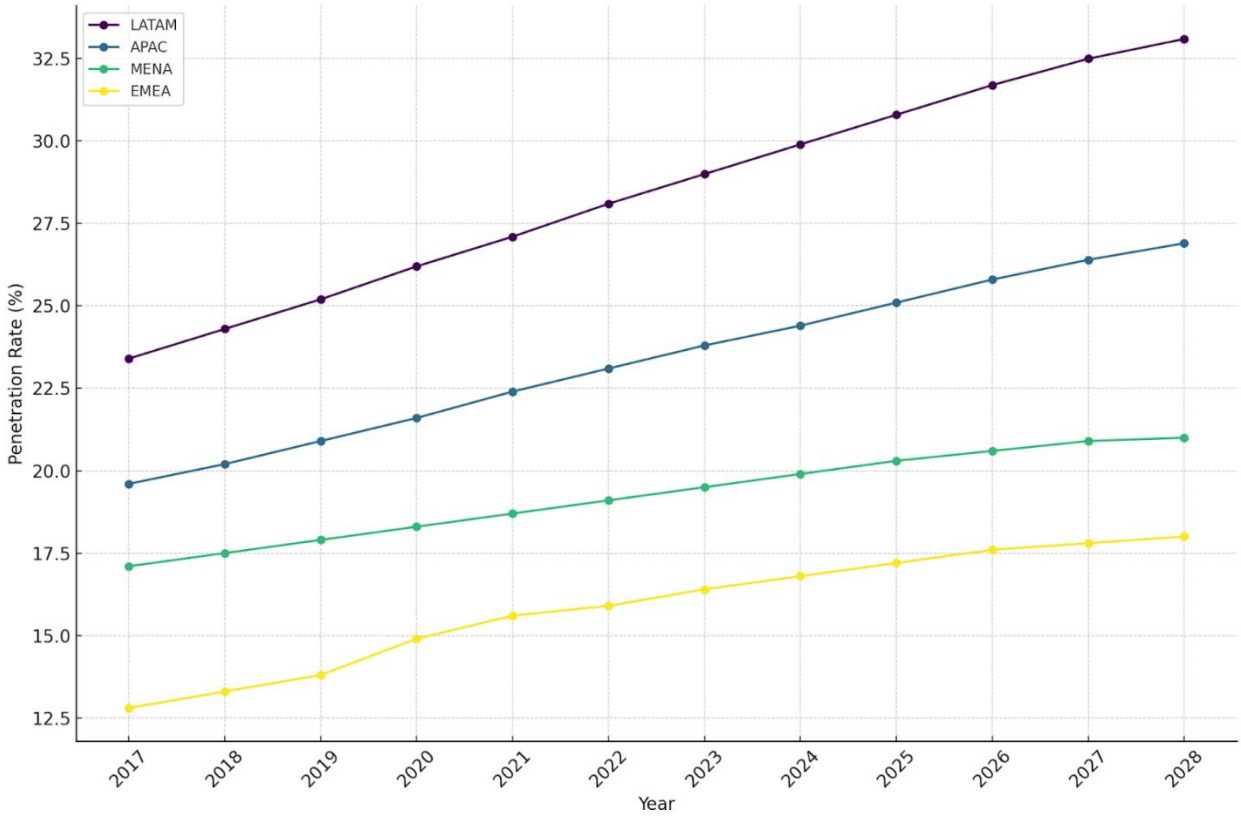
Source: Author based on official web pages, news, and literature review.
Note: See Appendix 1 for a detailed look at the sources used to construct this Figure.

By the end of 2023, a decade since Cabify first entered Chile, Mexico, and Peru, the TNC landscape in Latin America remains dynamic. The US-based Uber, the most dominant player, now operates in 16 countries, reflecting its expansive strategy and adaptability across diverse markets (Haidar & Garavaglia, 2022). Trailing Uber is the Chinese company DiDi and the Spanish platform Cabify, which have secured their presence in 10 and 7 countries, respectively. It is important to note that both Uber Technologies, Inc. and DiDi Global, Inc. are leading corporations in the ride-hailing sector with positions in global stock markets. These platforms maintain a significant market share, highlighting new entrants' challenges in disrupting established monopolies and the enduring influence of major players in shaping platform landscapes.

Then, the Greek company Beat, which had significant operations in Argentina, Chile, Mexico, and Peru, ceased its Latin American operations at the end of 2022 to refocus its investments in Europe (Gonzalez, 2022). Meanwhile, Bolt, an Estonian firm, has carved out a niche in at least four countries: Mexico, Ecuador, Paraguay, and El Salvador. Additionally, originating from Russia, inDrive has significantly expanded its presence to 15 Latin American countries since 2018, positioning itself after Uber as the second platform in regional penetration. Among the mentioned platforms, inDrive stands apart in the regional TNC landscape by offering a business model that allows drivers and passengers to negotiate fares directly rather than relying on algorithmic pricing. This feature has contributed to its popularity and expansion worldwide (Tiara et al., 2024). In 2023, another Russian TNC, Yango, recently announced the beginning of operations in Latin America (see Appendix 1).

Due to the difficulties in gathering public data, our comparative mapping of the worldwide ride-hailing market primarily relies on secondary sources. According to Statista (2024), user penetration rates for ride-hailing platforms in Latin America have shown a remarkable upward trajectory since 2017 (Figure 2).

Figure 2. Ride-hailing penetration rate and market share forecast by region of the world, 2017-2028 (percent)



Source: Author based on data from Statista (2024).

Acronyms: LATAM (Latin America), APAC (Asia-Pacific), MENA (Middle East and North Africa), EMEA (Europe, the Middle East and Africa).

Projections expect the TNCs market to achieve a penetration rate of 33.1% by 2028. This trend could reflect a growing consumer preference for ride-hailing apps, underscoring the ongoing platformization of urban mobility worldwide. Notably, starting from 23.4% in 2017 and expected to climb to 33.1% by 2028, the Latin American region shows the highest and most consistent growth in penetration rates among the four geographical areas overall. This tendency might indicate a substantial and increasing reliance on ride-hailing services in Latin American countries for the upcoming years, possibly due to the deepening of the mentioned structural conditions, such as the expanding urban areas, improving mobile connectivity, and expanding TNCs.

Despite these comparative efforts supported by secondary sources, it becomes clear that exploring TNC penetration and impact in Latin America involves significant challenges, primarily due to the scarcity of public and periodic data, corporate secrecy, and inconsistencies in regional

approaches. These issues underscore the need for methodological innovation to effectively equip policymakers and government officials with the means to develop regulatory frameworks protected by informed decision-making.

4. Methodological Approach

This study adopts an empirical-descriptive approach to examine the regulation of ride-hailing platforms across Latin America, evaluating how various countries have responded to the policy challenges posed by TNCs from diverse regulatory perspectives. We employ a mixed methods approach grounded in the principles of triangulation, which guides our research's data collection and analytical phases (Turner et al., 2017). This decision implies combining quantitative and qualitative data to provide complementary insights for discussion. The detailed methodology is explained in the subsequent sections.

Data collection

First, it was essential to map the norms and guidelines issued by various transportation authorities and regulatory bodies across the region to understand the specific regulatory regimes and standards employed by different cities or countries. Consequently, we conducted a thorough *document analysis* to ensure a comprehensive view of the regulatory landscape. We systematically identified and collected diverse documents and policies, including legislation, decrees, and other official documents.

Following Moran and Lasley's (2017) guidelines and given the diversity of local rules, regulatory bodies, and standards that govern urban transport regionally, we focused on developing a repository of current and relevant regulatory documents. This repository was compiled using a combination of public databases, official government websites, and, where necessary, requests for information under public access laws. Policy selection criteria included Latin American countries as observation units where ride-hailing platform regulation was enacted between 2015 and 2023.

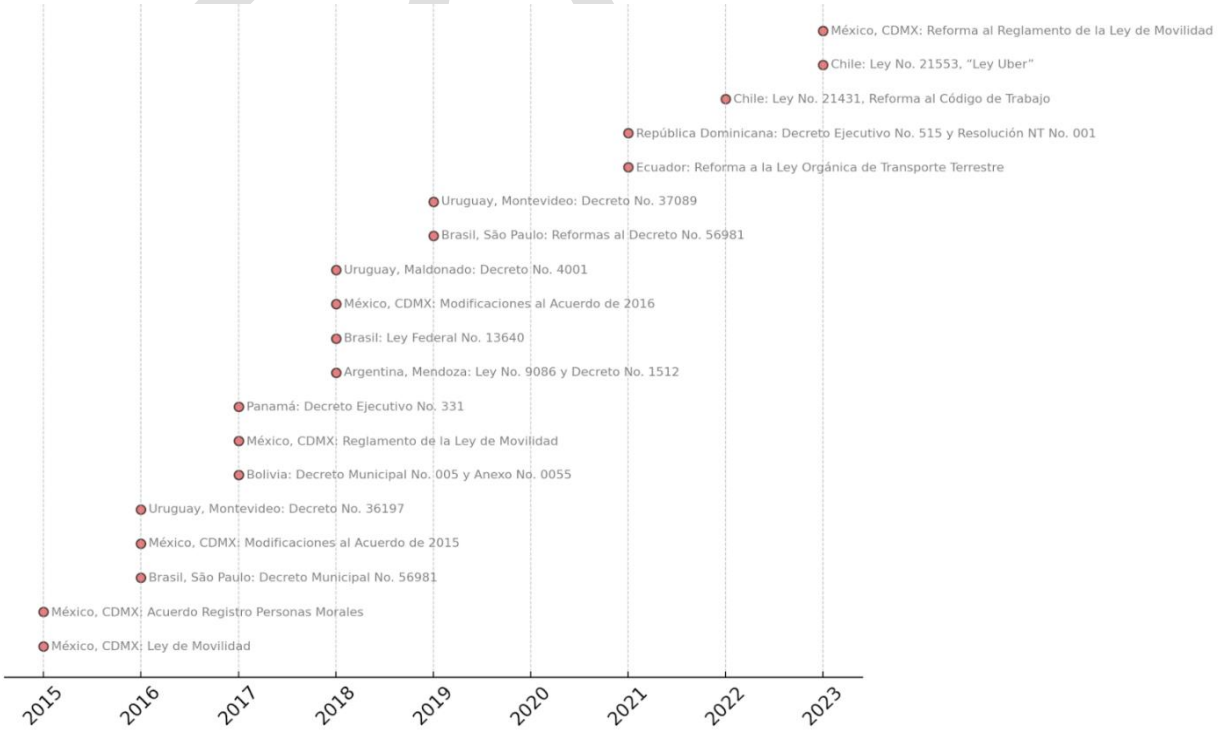
The data collection procedure acknowledges the causal heterogeneity across Latin America, emphasizing the importance of regional specificities and intra-regional dissemination in comparative politics (Mainwaring et al., 2007). Acknowledging the different administrative divisions across the region, which range from unitary to federal states and include other institutional arrangements like anatomical regions and cities, we chose to focus on the first city

within each country that enacted regulations as a criterion for comparison in cases of subnational regulation (such as the Province of Mendoza in Argentina, the Municipality of Sao Paulo in Brazil, the Municipality of La Paz in Bolivia and Mexico City).

Although regulations have been mapped in Brazil in at least eighteen states or capital cities (see Vendemiatto, 2019), in Mexico in at least ten (see García, 2017), or two in Uruguay (León & Pizzo, 2022), the proposed exercise contributes to understanding the broad institutional diversity across the region, setting the stage for future case studies. Thus, even though this analysis is not exhaustive of all subnational entities, as a first approach, it strategically covers institutional diversity in all the countries that have regulated TNCs somehow. We aim to set a starting point, for example, for further intra-case comparisons within states, federal governments, or cities with specific regulations.

Figure 3 informs the selection of 21 policies from nine countries or cities. Furthermore, acknowledging the evolving nature of platform regulation, we have included all regulations promulgated to date for each observational unit. Appendix 2 presents the details of the policies selected for the analysis.

Figure 3. Corpus of Policies for Analysis (N=21)



Source: Own elaboration.

Complementarily, we conducted nine *expert interviews* from June 2023 to May 2024. The selection of interviewees was informed by a review of specialized scholars in the evolving field of Platform studies and Internet platform policy and regulation in Latin America. These semi-structured interviews, which lasted an average of 45 minutes, explored specific areas of interest identified during the literature review phase. For each informant, we adapted a question guide designed to examine the context of TNC entry into Latin American markets, the ensuing conflicts, the evolution of regulatory debates, and progress in policy responses depending on their expertise in different countries.

The semi-structured format of the interviews facilitated a deeper understanding of regulatory perspectives across different national contexts, aiding in the validation of policy selection and enriching our case knowledge. To uphold ethical standards of confidentiality, we anonymized the qualitative data. Information saturation was the stopping criterion for the interview phase. Furthermore, these interviews enriched the discussion section of our study, creating a dynamic interplay between quantitative data and qualitative insights. We utilized automatic transcription software to manage and explore the qualitative data for analysis. For details on anonymization, geographical diversity, gender distribution, and other decisions about the questionnaire, see Appendix 3.

Data analysis

Building on the tradition of comparative policy analysis (Cyr & deLeon, 1975), we initially developed a deductive theoretical categorization scheme guided by prior developments in the field (Collier et al., 2018; Dinegro, 2022; Moran & Lasley, 2017; Thelen, 2018). Each regulatory document underwent a theoretical-guided *content analysis* supported by the qualitative data analysis software Atlas.ti.9.

The content scrutiny enabled us to classify the policy documents according to pre-established categories. While the deductive categorization proved valuable initially, we also incorporated inductive elements to allow for the emergence of new categories. This approach resulted in constructing ten subdimensions integrated into five principal categories or dimensions (Table 1).

Table 1. Theoretical Approach for the Comparative Policy Analysis of TNC Regulation

Dimension	Subdimensions	Description	Regulatory Items
1. Market Access (MA)	1.1. Administrative and Compliance Regulations 1.2. Operational Restrictions and Access to Infrastructures	This dimension focuses on regulations impacting TNC market access. It includes mentions of barriers, registration requirements to operate, and the terms of competition in the passenger transport service. Also, the framework that differentiates TNCs from traditional taxi services and infrastructure limitations to operate in different jurisdictions.	registration, registration fees, operation licensing, vehicle safety, vehicle caps, taxi stations, airport access, contracting, and zoning.
2. Labor and Employment (LE)	2.1. Work Safety 2.2. Labor Rights	This dimension addresses a series of fundamental aspects related to working conditions, social security, and contractual and labor rights of workers of TNCs. It includes limitations on working hours for drivers, establishing daily maximums in both continuous and fractional days, and contractual terms for digital platform workers, including transparency in the determination of rates, connection times, fundamental rights, and impacts on welfare systems.	labor rights and guarantees, clear contractual conditions, limits on working hours, compensation, training, and safety equipment, insurance, unionization, and disconnection rights.

3. Consumer Protection and Safety (CPS)	3.1. Safety Measures for Passengers 3.2. Transparency and Evaluation of the Service	This dimension covers consumer protection rights and safety aspects in the context of TNCs' services. These regulations incorporate the need for regulatory documentation, driver's licenses, technical inspections, compliance with safety standards for vehicles and drivers, access to pre-trip price estimates, and clarity about payment methods. It also includes mandatory insurance that covers passengers, drivers, and third parties during the transportation service, the promotion of non-discrimination, and the possibility of evaluating the service.	transparency in rates, safety measures like background checks, vehicle inspections, driver training, accident insurance coverage, civil liability of TNCs for damages and losses, protection for abusive or discriminatory practices, panic buttons, and mechanisms for evaluating the service transportation and customer service.
4. Taxation and Public Goods (TPG)	4.1. Taxation and Compliance 4.2. Use and Management of Public Space	This dimension captures various aspects related to taxation and its impact on public goods, including contributions of TNCs to funds destined for mobility, the fiscal obligations of operators, and the collection of taxes that directly affect infrastructure and public services.	mobility funds, tax compensation rates and other specific taxes, transparency and fiscal compliance, use of public space, pollution, and congestion control.
5. Data Governance and Algorithmic Accountability (DGAA)	5.1. Governance 5.2. Accountability	This dimension reflects fundamental aspects of how TNCs manage and are responsible for the use of data and algorithms. These aspects are crucial to guarantee transparency, security, and equity in providing services, emphasizing the importance of protecting consumer data and ensuring data security.	data governance, data-sharing provisions with public authorities, registration, and supervision of drivers, fare calculation, and algorithmic transparency.

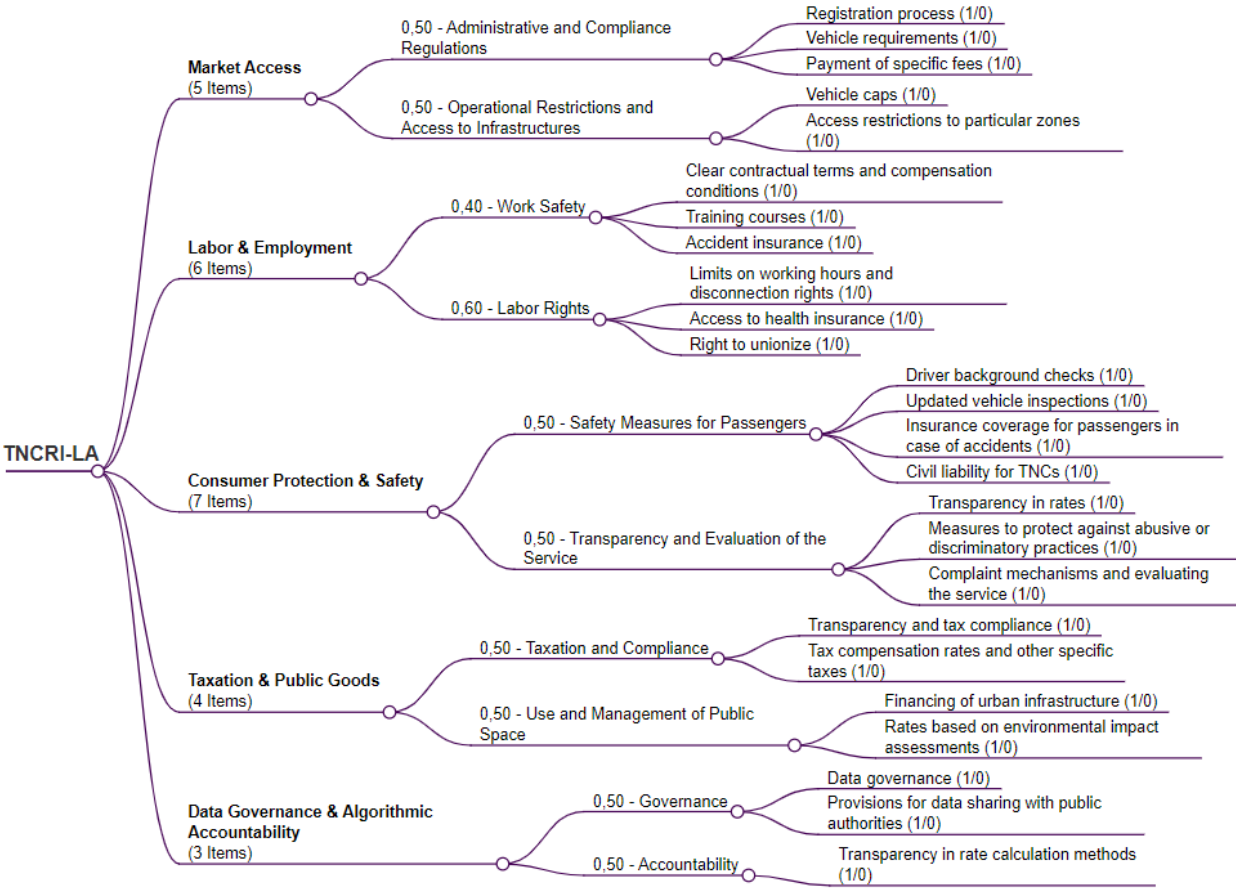
Source: Author based on Collier et al. (2018), Cooper et al. (2023), Dinegro (2022), Moran & Lasley (2017), and Thelen (2018).

Subsequently, acknowledging that predominantly regional literature on ride-hailing focuses on exploring regulatory principles, market dynamics, and user/consumer profiles (see Fielbaum & Tirachini, 2021) rather than contrasting specific regulatory responses, we early recognized the need for a robust comparative analytical lens. This recognition led to the creation of the "Transportation Network Companies Regulation Index for Latin America" (in the following, TNCRI-LA), designed to measure and compare regulatory approaches across the region, reflecting the intensity and scope of regulations.

The development of this index was not only informed by theoretically defined categories, expert consultations, and relevant literature but also guided by the importance of refining the comparative method and addressing the opportunities and challenges of applying it to diverse political contexts (Denter & Mossberger, 2006).

Table 2 outlines the structured framework for evaluating regulations with the TNCRI-LA. The index has several dimensions, subdimensions, and specific regulatory issues. The first column lists each dimension and its proportional weight based on the total number of issues it encompasses. The second column details the subdimensions and the maximum values for respective indicators. Each dimension is scored on a scale from 0 to 1, where 0 indicates minimal or no regulation and compliance, and 1 represents comprehensive regulation and highly effective compliance mechanisms. Intermediate values signify varying degrees of regulation and compliance, with values closer to 1 indicating higher levels of regulatory stringency. Each dimension includes two subdimensions, each with a maximum score of 0.50. The weighting of subdimensions reflects their relative importance according to the total number of regulatory items. Lastly, the third column presents how each subdimension is measured using a categorical measure of 0 or 1, where 1 means the presence of the regulatory issue in the analyzed policy documents, and 0 denotes its absence. Appendix 4 encompasses a detailed description of the construction of the index, methodological decisions, and its extent and limitations for comparative research.

Figure 4. Overview of the TNCRI-LA, according to dimensions, subdimensions, indicators, and regulatory items



Source: Own elaboration.

The TNCRI-LA serves as a foundation for exploring the underlying structure of the data and group countries based on similarities and differences in their regulatory frameworks. We employ descriptive statistics and multivariate techniques, such as cluster analysis, to achieve this. This approach helps us discern regulatory convergence and divergence patterns, effectively categorizing countries with similar overall policy responses.

Finally, the analytical phase was further enriched by incorporating insights from expert interviews, which served to cross-validate the empirical evidence and theoretical insights derived from the initial research phases. Additionally, the interviews provided a deeper exploration of the nuances and complexities of TNC regulation that might need to be fully captured through quantitative data and content analysis alone.

5. Results: What is Regulated? Overall Trends from the TNCRI-LA

This section presents the results of the TNCRI-LA by dimensions and indicators, synthesized by country, derived from the final and weighted scores (Table 2). In the following, we examine the most significant insights into the region's regulatory landscape for ride-hailing platforms.

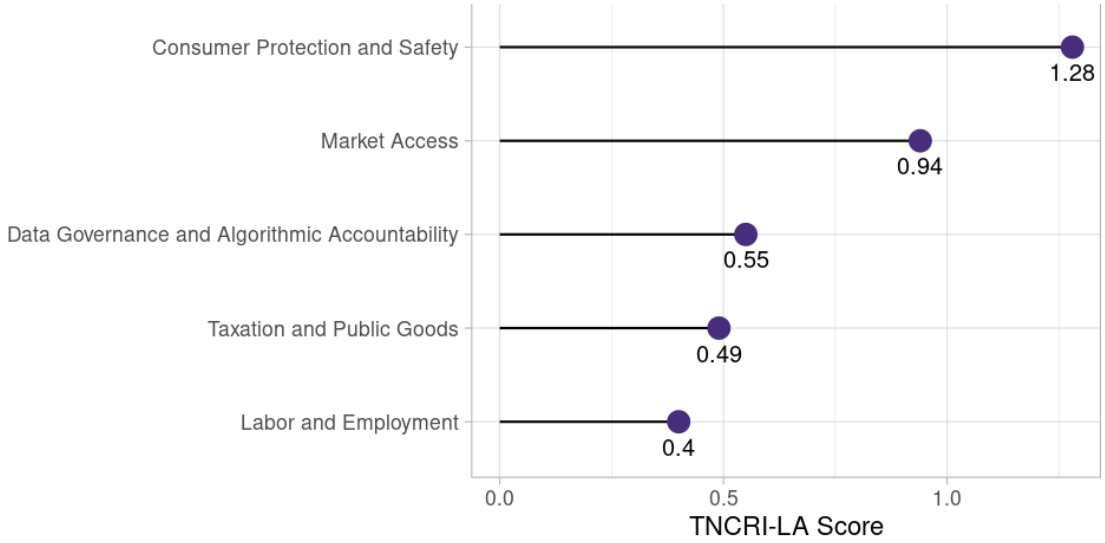
Table 2. Final and weighted results of the TNCRI-LA by country and dimension

Dimensions		Argentina	Bolivia	Brasil	Chile	Ecuador	México	Panamá	R. Dominicana	Uruguay
1. Market Access (MA)		*1*	*0,33*	*0,5*	*0,58*	*0,17*	*0,5*	*0,42*	*0,33*	*0,83*
	20%	**0,20**	**0,07**	**0,10**	**0,12**	**0,03**	**0,10**	**0,08**	**0,07**	**0,17**
2. Labor and Employment (LE)		*0,2*	*0*	*0,2*	*1*	*0*	*0*	*0*	*0*	*0,2*
	25%	0,05	0,00	0,05	0,25	0,00	0,00	0,00	0,00	0,05
3. Consumer Protection and Safety (CPS)		*0,83*	*0,38*	*0,88*	*0,71*	*0,17*	*0,17*	*0,42*	*0,42*	*0,29*
	30%	**0,25**	**0,11**	**0,26**	**0,21**	**0,05**	**0,05**	**0,13**	**0,13**	**0,09**
4. Taxation and Public Goods (TPG)		*0,75*	*0,25*	*0,75*	*0,25*	*0*	*0,75*	*0*	*0*	*0,5*
	15%	**0,11**	**0,04**	**0,11**	**0,04**	**0,00**	**0,11**	**0,00**	**0,00**	**0,08**
5. Data Governance and Algorithmic Accountability (DGAA)		*0,5*	*1*	*1*	*1*	*0*	*1*	*0,5*	*0*	*0,5*
	10%	**0,05**	**0,10**	**0,10**	**0,10**	**0,00**	**0,10**	**0,05**	**0,00**	**0,05**
		3,28	*1,96*	*3,33*	*3,54*	*0,34*	*2,42*	*1,34*	*0,75*	*2,32*
Total	100%	**0,66**	**0,32**	**0,63**	**0,72**	**0,08**	**0,36**	**0,26**	**0,19**	**0,43**

Source: Own elaboration.
Note: The blank boxes correspond to the final scores, while the boxes with bars correspond to the weighted figures.

Figure 4 illustrates that the regulation of TNCs in Latin America is primarily concentrated in two dimensions, accounting for around 60% of the regulatory focus. These dimensions are related to regulations of access to private passenger transportation (MA: 1.28) and consumer protection and safety (CPS: 0.94). To a lesser extent, regulations about data governance (DGAA: 0.55), the impact on public goods and fiscal responsibilities (TPG: 0.49), and minimal issues related to work and employment on platforms (LE: 0.40) are also evident.

Figure 4. TNCRI-LA aggregate scores by dimension

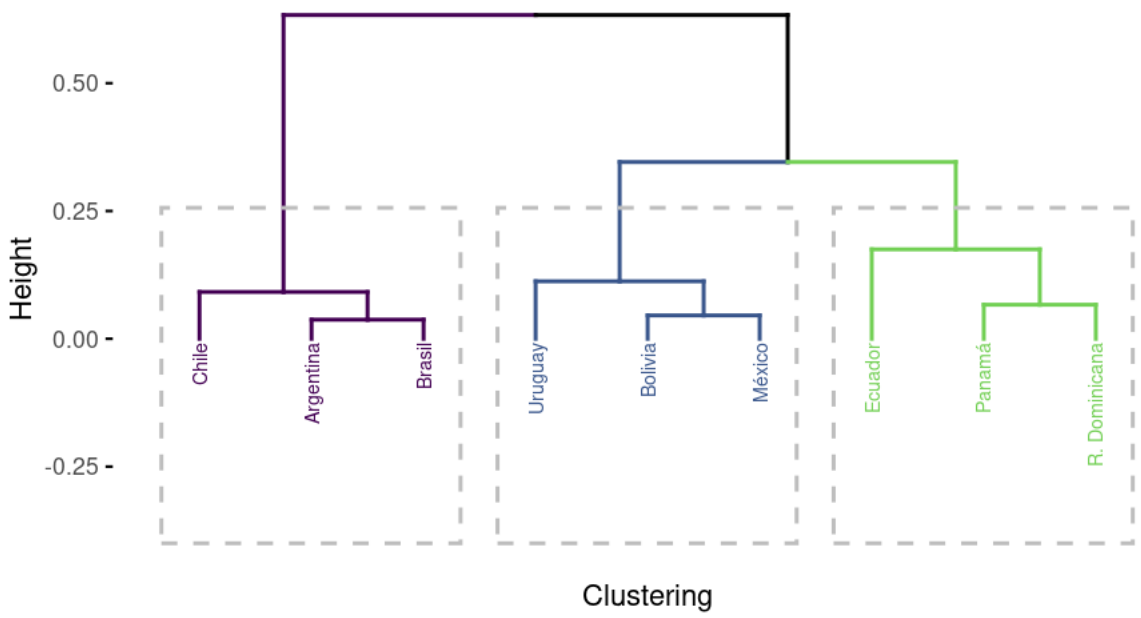


Source: Own elaboration.

Disaggregating the trends by country reveals distinct patterns. Chile emerged with the highest overall score (0.72), followed closely by Argentina (0.66) and Brazil (0.63). Conversely, countries like Ecuador (0.08) and the Dominican Republic (0.19) exhibit a more lenient approach to regulating ride-hailing platforms, demonstrating fewer scores in just dimensions.

In addition to the overall scores, to identify patterns among countries with similar regulatory approaches, we performed a cluster analysis to visualize the underlying structure of the regulatory landscape. We also evaluated the internal cohesion of the clusters using Euclidean distance as a similarity measure and the complete linkage method for cluster fusion (Figure 5).

Figure 5. Dendrogram of the Hierarchical Cluster Analysis



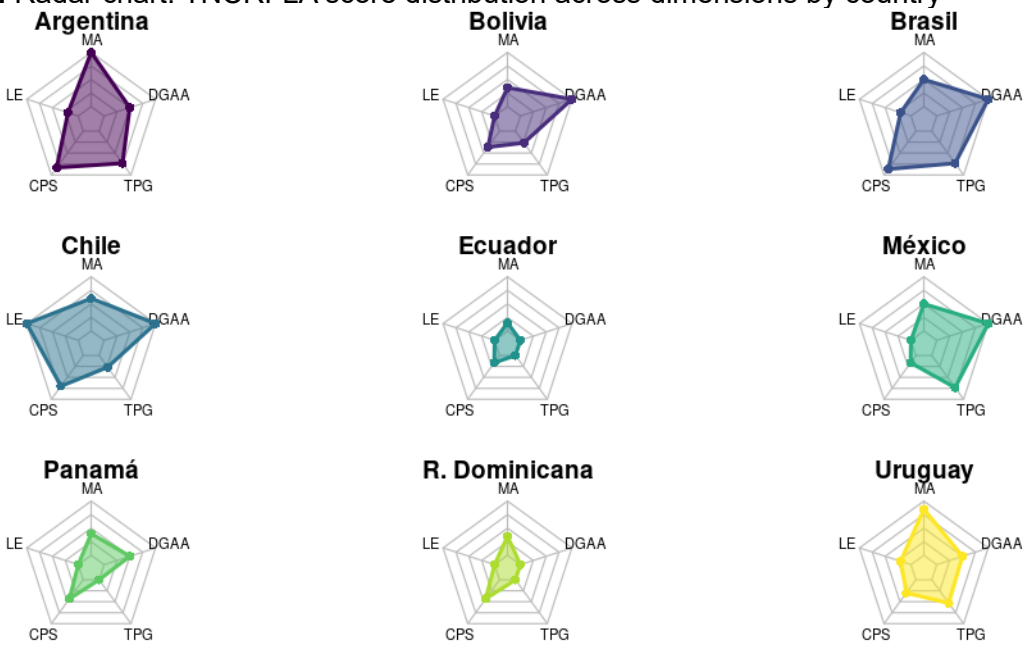
Source: Own elaboration.

The hierarchical clustering analysis revealed three clearly defined clusters based on similarities in regulatory scores. The resulting dendrogram represents the grouping of countries based on their weighted regulatory scores:

- *Cluster 1:* This group includes countries with relatively high regulatory scores, such as Chile, Argentina, and Brazil.
- *Cluster 2:* This cluster comprises countries with moderate regulatory scores, such as Uruguay, Bolivia, and Mexico.
- *Cluster 3:* The third cluster represents countries with lower regulatory scores, including Ecuador, Panama, and the Dominican Republic.

Although the clusters allow us to observe the varying degrees of regulatory rigor across the region, they do not necessarily reflect the specific orientation of the regulations. Figure 6 presents a radar visualization that summarizes the strengths and weaknesses of each country across different regulatory dimensions. Then, we further develop the extent of these dimensions based on the results of the content analysis of policy documents (see Appendixes 5-6).

Figure 6. Radar chart. TNCRI-LA score distribution across dimensions by country



Source: Own elaboration.

When examining the nuances within countries and comparing them across dimensions, in the *Market Access* dimension, Argentina leads with a score of 0.20, indicating greater ease of entry for businesses. Uruguay (0.17) and Chile (0.12) also show relatively higher market accessibility, whereas Ecuador scores the lowest (0.03), suggesting more significant restrictions on market entry. These regulations play a crucial role in shaping the operations of electronic platforms offering private transport services. Critical aspects of these regulations include registration requirements, operational constraints, and specific regional provisions that platforms, along with their associated vehicles and drivers, must comply with to operate legally.

Within the MA dimension, many countries impose specific operational restrictions to regulate how and where transport services are offered, for instance, excluding certain areas from service provision in Argentina. In Mexico, regulations stipulate that registered vehicles cannot stay or wait in public areas, and payments in cash or via non-bank cards are prohibited. In Brazil, using urban roadways for private transport services is permitted only to accredited TNCs, emphasizing the regulated integration of transport services into city planning. Uruguay sets a cap on the number of vehicles operating within the city, indicating a controlled expansion of private transport services tailored to urban capacity.

Moreover, enforcement measures and penalties for non-compliance with regulations are explicitly mentioned in Mexico, where failure to adhere to regulations can result in sanctions such as suspension or definitive disqualification of the platform. Similar stringent checks and balances are placed on operational practices in other jurisdictions to ensure compliance with public safety and operational standards.

In *Labor and Employment*, Chile scored 0.25, reflecting a potentially stronger focus on labor rights. Brazil and Argentina followed, both scoring 0.05. Other countries, including Bolivia, Ecuador, Mexico, Panama, and the Dominican Republic, had minimal to no emphasis on labor-related regulations. These regulations in LE commonly cover work hours, social security contributions, contractual obligations, and rights to protect workers while adapting to the gig economy's flexibility.

For example, regulations in Argentina, Chile, and Uruguay strictly limit driving hours for transport service providers to prevent fatigue and ensure safety. Drivers can not dispatch trips for more than eight continuous hours or twelve fragmented hours within a single day. In Brazil, drivers must register as individual contributors to the National Social Security Institute (INSS), promoting social security coverage for healthcare, pension, and other benefits.

In addition, Chile's regulations provide a comprehensive framework for the contractual relationship between digital platform workers and service companies. Contracts must stipulate the right of workers to access social security, including health insurance, pension contributions, and coverage for workplace accidents and occupational diseases. Regarding worker protection, companies must provide training addressing safety and health standards.

Moreover, Chile emphasizes the rights of digital platform workers to disconnect for twelve continuous hours within a twenty-four-hour period, protecting them from the demands of constant availability and promoting work-life balance. Chilean law also strengthens the collective rights of digital platform workers, allowing them to form unions and engage in collective bargaining without prior authorization, thus aligning their rights with those of traditional employees. The “Uber Act” in Chile, as it is popularly known, also specifies procedures for contract termination, ensuring that workers have the right to prior notice and can contest unfair dismissals.

In third place, the *Consumer Protection and Safety* dimension had a substantial impact, contributing 30% to the overall TNCRI-LA score. Brazil (0.26), Argentina (0.25), and Chile (0.21)

led this category, demonstrating a commitment to consumer rights and safety. Conversely, Ecuador and Mexico (0.05) scored the lowest. CPS regulations ensure that service providers and users operate securely by setting standards for vehicle conditions, driver qualifications, and transparent billing practices.

Argentina, Brazil, and Chile emphasize maintaining high safety standards for vehicles used in transportation services. In Argentina, vehicles must undergo periodic technical reviews and maintain hygiene standards. Chile mandates that all vehicles meet minimum safety standards, undergo bi-annual technical reviews, and display an identifying sticker. In Brazil, vehicles must obtain a “Safety Certificate of the Vehicle of Application” (CSVAPP) to meet specific safety requirements before service deployment.

Ensuring that drivers are adequately qualified is a common issue. For instance, Argentina requires drivers to register with the TNCs and provide all necessary documentation, including a valid driving license and a "Carta Habilitante" issued by the provincial transport authority. In Chile, drivers must hold a professional license and pass particular background checks. Comprehensive insurance coverage is mandatory, protecting passengers, drivers, and third parties. In Argentina, vehicles must have full-risk insurance policies that cover damages to all parties involved in an accident. Brazil and Chile also enforce strict insurance requirements for personal accidents and damages. Transparency in fare calculation and service terms is also regulated to protect consumer rights.

Involving *Taxation and Public Goods*, Argentina, Brazil, and Mexico each scored 0.11, indicating moderate attention to this aspect. Conversely, Bolivia, Ecuador, Panama, and the Dominican Republic recorded lower scores, pointing to a gap in their approach to taxing TNCs. These TPG frameworks ensure platforms contribute to public goods through various taxes and levies, fostering a sustainable ecosystem that benefits public infrastructure and services.

In Argentina, for example, transportation platforms are required to contribute to a Mobility Fund. These contributions are calculated based on the number of vehicles authorized to operate within each period, ensuring that the platforms financially support the transportation infrastructure they utilize. Similarly, Uruguay has instituted a Mobility Fund financed by a per-kilometer fee charged to platforms, which is earmarked for improving urban mobility within the department.

Platforms and their drivers must comply with local tax regulations, including paying income taxes, Value Added Tax (VAT), and other relevant fiscal duties. In Argentina, platforms must ensure that all drivers are up to date with their tax and social security obligations before they can be assigned trips. This compliance extends to annual certifications presented to the authorities, proving adherence to tax obligations. Several jurisdictions impose specific levies on ride-hailing platforms. Argentina enforces a surcharge of 1% on the total fare for each trip as part of the Gross Income Tax, which platforms must collect and remit. Brazil employs a system where platforms pay for the right to use urban roadways intensively through a public price based on the distance traveled by vehicles.

Platforms are typically required to report their earnings and tax contributions regularly. For example, in Mexico, platforms must report and pay duties for each vehicle through an official web portal, ensuring transparency and ease of compliance. Governments often provide incentives such as tax breaks or reduced rates for platforms that meet specific environmental or operational standards to encourage compliance and sustainable practices. Conversely, penalties for non-compliance can be severe, ranging from fines to revoking operating licenses, ensuring that platforms adhere strictly to tax laws.

Finally, in the *Data Governance and Algorithmic Accountability* dimension, Bolivia, Brazil, Chile, and Mexico each achieved the same score (0.10). In contrast, Ecuador and the Dominican Republic scored 0, indicating a lack of regulation in data-related matters. DGAA frameworks ensure data accuracy, protect user privacy, promote transparency, and stipulate some accountability standards in algorithmic decision-making.

Regulatory bodies require transportation platforms to collect and maintain accurate and comprehensive data on vehicle operations, driver details, and user interactions. In Argentina, platforms must provide the regulatory agency with updated vehicle and driver registries for continuous monitoring and compliance verification. Similarly, the Ministry of Transport and Telecommunications maintains a regional electronic register of transport applications and drivers in Chile, ensuring that only authorized individuals engage in passenger transport.

Several jurisdictions have established specific rules to ensure that algorithms governing platform operations, such as dispatching rides or calculating fares, are transparent and fair. In Chile, platforms must disclose the operational details of their algorithms to drivers, including how

decisions are made and on what basis, which guards against discriminatory practices and enhances fairness in operations.

The protection of personal data is a cornerstone of data governance policies. Regulations stipulate that platforms must safeguard user and driver data, complying with national data protection laws. Brazilian regulations require TNCs to share data with municipal authorities while ensuring the privacy and confidentiality of personal information. Platforms must also regularly report their data to regulatory authorities to aid in oversight and public policy implementation, including data on trip details, user complaints, and compliance with local regulations.

In Uruguay, platforms must provide the “Intendencia de Montevideo” with comprehensive data on drivers, routes, and fares to facilitate effective governance and enhance public transport policies. As a method of enforcement, authorities impose sanctions on platforms and drivers who fail to comply with data governance standards. For instance, Chile has established penalties for altering charging mechanisms or geolocation data, which is considered a severe offense.

Altogether, the results provide a deeper understanding of the similarities and differences in regulatory approaches among countries and highlight variations in at least two dimensions: robustness and directionality of regulation. Below, we will discuss the meaning of these trends, considering the challenges and expert insights in the region.

6. Discussion: Why Regulate? Expert Insights on Regulatory Challenges

In examining the regulatory landscape for TNCs in Latin America, this discussion integrates the TNCRI-LA findings with insights from regional experts to understand the implications of these regulatory frameworks and the challenges they pose across different dimensions. Analyzing the results from expert interviews reveals two notable trends despite slight differences. Experts unanimously agree on the necessity to regulate Transportation Network Companies (TNCs) in areas where legal gaps exist. They also highlight areas for improvement in enforcement in countries that have made progress with policies regulating ride-hailing services at varying levels of stringency.

The focus on dimensions such as MA and CPS suggests a regional priority to manage the entry of ride-hailing businesses and ensure user safety. Experts provided insights, emphasizing the impact of policies in contexts that have seen policy advancements. These policies often stem from rapid market growth characterized by intense competition. Multiple TNCs operate

simultaneously, offering promotions and various formats for consumer acquisition (Expert 8, personal communication).

Experts have noted that platforms have adopted some self-regulation measures, especially concerning highly regulated aspects like driver registration and passenger safety. These movements have supported their argument that they should not face further regulation. They claim that regulations on Market Access (MA) and Consumer Protection Standards (CPS) are merely soft enforcement in areas that do not challenge the platforms' operations (Expert 7, staff communication). However, the extent of self-regulation varies significantly among different platform companies, creating a landscape where users perceive some platforms as safer than others. Security is a critical issue in the region, and platforms have used these measures to strengthen their legitimacy (Expert 8, personal communication).

On the other hand, while resistance from traditional taxi industry unions has been shared across the region and has sometimes escalated to violence and persecution, some experts believe this mobilization has not significantly influenced political change. Although taxi drivers' unions in many Latin American countries have been historically significant pressure groups with political connections, they have been ineffective in pushing for regulation on this issue. They appear to be a weary union (Expert 1, personal communication). The taxi sector's focus on the unfair competition posed by platforms has polarized the debate, framing the only solution as making platform work equivalent to taxi work.

According to informants, the traditional taxi industry's stubbornness and public perception of it as outdated, resistant to technology, and corrupt have contributed to its delegitimization in public opinion. Additionally, frustration over stalled legislation on equalizing conditions has often resulted in the taxi sector being overwhelmed by competition. In response, platforms have strategically started incorporating taxis into their apps in certain countries. Initiatives like DiDi Taxi, Uber Taxi, and Cabify's acquisition of EasyTaxi in 2018 have caused significant demobilization within the taxi sector. By joining these platforms, taxi drivers leverage the existing demand while retaining benefits like access to exclusive lanes, taxi ranks, and the ability to pick up passengers from the street (Expert 7, personal communication).

The region faces challenges in LE issues. While the taxi sector has occasionally pushed the labor rights agenda, this has often been more strategic than genuine. They aim to underscore the unfair

competition from platforms that do not face the exact requirements for transporting passengers (Expert 1, personal communication).

Platform drivers have opposed labor regulation for several reasons (Expert 4, personal communication). Firstly, they are reluctant to pay taxes. Secondly, they fear establishing a formal employment relationship might prompt platforms to exit the country. This situation challenges institutions to make formal employment appealing to platform workers (Expert 3, personal communication).

Although Chile has made strides in setting minimum working conditions, countries must address working conditions and drivers' rights (Expert 6, personal communication) more comprehensively. Regulation in labor matters is crucial because some drivers may work up to 12 hours, posing safety risks. While some policies attempt to address these issues, and platforms claim to self-regulate by setting maximum continuous connection limits, drivers often register on multiple platforms to maximize profits and circumvent these controls. A black market for subletting accounts has also emerged, capturing much migrant labor, where workers prefer platforms with low entry barriers, which show little interest in establishing formal work ties (Expert 8, personal communication).

In the region, a common strategy has been to pursue judicialization, aiming for courts to set precedents by establishing labor ties between platforms and drivers, as seen in Argentina, Costa Rica, and Uruguay. However, these judicial battles often need to address the root of the problem. At the same time, they do not set legislative precedents nor create substantive rights, as the judicial outcomes primarily result in financial compensations, akin to "covering the sun with a finger" (Expert 2, personal communication).

Regarding TPG, some policies have aimed to impose specific taxes, such as mobility funds, to compensate for the road congestion and environmental impact caused by the expansion of the ride-hailing market (Expert 7, personal communication). Despite these efforts, legal gaps persist years after the platforms' entry. Like the case of streaming services, some countries have responded to the regulatory stalemate by paradoxically imposing VAT on ride-hailing transactions. While publicly deeming these platforms' operations illegal, this tax policy problematically shifts the fiscal burden onto consumers. It overlooks the broader potential of the tax framework to contribute to public goods and mitigate the negative externalities of the platforms' unchecked growth (Expert 9, personal communication).

Regarding DGAA, the regulation still fails to address the need to introduce platforms as an issue that transcends market access or road safety measures. Many experts concur that data governance and algorithmic transparency, especially concerning rating systems and fare determination, should be considered in public discussions. This gap results in platforms monopolizing mobility data, which hinders public authorities from utilizing this information for urban planning and public decision-making (Expert 4; Expert 7, personal communication). Furthermore, there are concerns about platforms extracting user data and lacking transparency in their data management practices (Expert 8, personal communication). While some regulations require TNCs and platforms to facilitate data sharing, practical implementation, such as in Mexico City, shows that public access to aggregated data remains limited. Enforcement mechanisms in this area could be more effective (Expert 4; Expert 7, personal communication).

These discussions on the five regulatory dimensions reveal common challenges across the region, regardless of whether platform expansion occurs in regulated environments or legal vacuums. Firstly, experts note that comprehensive legislative initiatives often stall due to their opportunistic nature, which is tied to the prevailing government dynamics, including social conflicts, the pandemic, and migratory trends. Secondly, this situation has led to a "de facto regulation" approach where gray areas persist, allowing the market and service normalization to expand in legal voids. Lastly, the regulation of platforms is recognized as a non-linear and dynamic process. It varies across governments and does not necessarily conclude with policy establishment. Experts from regulated contexts have criticized the existing policies for not being comprehensive and for failing to address core issues, such as the continuation of labor informality, even beyond ride-hailing platforms. Additionally, in some countries, informal alternatives like "mototaxismo" in Colombia have emerged. These operate not through cooperative models but via a “black-market dynamic” on social platforms like Facebook or WhatsApp, making ensuring minimum safety and protection standards challenging.

Conclusions and Future Research

This study has provided a novel analysis of the regulatory landscape for Transportation Network Companies (TNCs) across Latin America, revealing significant trends and challenges. The introduction of the Transportation Network Companies Regulation Index for Latin America (TNCRI-LA) also allowed the categorization and comparison of policy responses, providing a nuanced understanding of regional regulatory adaptations to platform capitalism.

By identifying five key regulatory dimensions, Market Access (MA), Consumer Protection and Safety (CPS), Labor and Employment (LE), Taxation and Public Goods (TPG), and Data Governance and Algorithmic Accountability (DGAA), the analysis indicates that MA and CPS are the primary focus areas in analyzed policies, suggesting that managing entry and ensuring safety are top priorities across countries or cities. However, there needs to be more emphasis on labor rights and data governance, highlighting gaps in addressing worker protections and data transparency.

The findings also highlight the diversity of regulatory approaches among Latin American countries. While some cases, like Chile, Argentina, and Brazil, exhibit stringent regulatory frameworks, others, such as Ecuador and the Dominican Republic, have adopted more lenient approaches. This diversity reflects the region's varying political, economic, and social contexts, influencing how each country addresses the integration of TNCs into their urban mobility landscapes.

The research underscores significant challenges in enforcement and compliance across the region. In addition, while some experts observe platform self-regulation measures, their effectiveness varies, leading to safety and operational standards discrepancies. The traditional taxi industry's resistance has not substantially influenced policy changes, and platforms have strategically incorporated taxis into their services, further complicating the regulatory landscape. Labor and employment regulations still need to be revised, with many platform drivers opposing formal employment due to tax obligations and fears of TNC exit. The persistence of informal labor practices, including subletting accounts and exploiting migrant labor, underscores the need for at least minimal labor protections. Judicial efforts to establish labor ties have yielded limited results, often failing to address root issues and provide substantive rights. In addition, the taxation framework reveals attempts to impose specific levies to address the environmental and infrastructural impacts of TNCs. However, legal gaps and paradoxical tax policies, such as imposing VAT while deeming operations illegal, shift the fiscal burden to consumers and limit broader contributions to public goods. Platforms' monopolization of mobility data hinders public authorities' ability to utilize this information for urban planning. Concerns about data extraction and lack of transparency necessitate more robust regulatory measures to ensure fair and accountable use of data.

Overall, regulating TNCs results in a dynamic and non-linear process influenced by government dynamics, social conflicts, and market forces. The persistence of legal voids and de facto

regulation allows market normalization in unregulated environments. Experts from regulated contexts criticize existing policies for not being comprehensive and failing to address core issues like labor informality. Consequently, this study underscores the need for more comprehensive and cohesive regulatory frameworks that address all dimensions of TNC operations. Policymakers should focus on closing legal gaps, enhancing enforcement mechanisms, and ensuring equitable labor protections. Fostering transparency and accountability in data governance is crucial for effective urban mobility management.

While the TNCRI-LA provides valuable insights, it also has limitations. We made some adaptations to tailor the index specifically for the Latin American context, which may affect the generalizability of the findings. Additionally, the index does not account for intra-country diversity, as seen in nations like Mexico and Brazil, where regional variations in regulatory practices exist. Future research should expand the application of the index to include intra-case comparisons and consider these regional diversities. Despite these limitations, the TNCRI-LA holds significant potential for adaptation and application in other regions, contributing to a more global understanding of TNC regulation.

Future research should explore the comparative impacts of different regulatory approaches, focusing on process-tracing studies that track changes over time. Investigating the socioeconomic impacts of TNCs on informal labor markets and urban environments will provide deeper insights into the broader implications of platform capitalism in Latin America. Specific areas for further study include:

- *Political processes in platform regulation*: An in-depth examination of the political processes involved in policy change related to platform regulation is essential. Future research should focus on understanding the divergences between countries, even those with existing regulations. This procedure could include process tracing research, focusing on deepening legislative initiatives, parliamentary hearings, and motions to explore the political discourse surrounding these policies. Additionally, studying the public attention cycles for these initiatives, influenced by events like migration waves, pandemics, and social conflicts, could provide insights into the fluctuating priorities in regulatory politics. The "Uber Files" have highlighted the extent of corporate lobbying by TNCs globally and in Latin America, revealing power asymmetries between multinational corporations and Global South countries. These aspects are crucial for regulatory politics in the gig economy and platform governance, which considers the role of multiple stakeholders,

including platform companies and citizen organizations, in shaping regulatory arenas (Hernández, 2018; Sáenz, 2023).

- *Institutional diffusion*: There are indications of a potential "institutional diffusion" of the Chilean model of platform regulation, which experts regard as the most comprehensive to date, despite its limitations and challenges. Future studies should investigate the how and why of specific adoption of regulatory frameworks across different countries and the factors contributing to their perceived effectiveness and adaptability (see Ovodenko & Keohane, 2012).
- *Critical platform studies*: Critical platform studies have successfully mapped the precarious nature of platform work in Latin America, but there are other promising avenues for research. Topics such as data colonialism and algorithmic resistance offer new perspectives. While data colonialism examines the power dynamics of data extraction by platforms (Mejias & Couldry, 2024), algorithmic resistance focuses on how platform workers exert agency against algorithmic control (Bonini & Treré, 2024). Both approaches require further exploration to understand their implications fully.
- *Emerging regulatory fields*: New areas are emerging within platform regulation, such as the case of autonomous vehicle trials in Brazil. Research should delve into this significant shift that could redefine the operational and regulatory paradigms of ride-hailing services in the region (see London & Danks, 2018).
- *Informal work and the platform economy*: The gig economy has also highlighted the persistence of informal work arrangements, extending beyond traditional gig platforms. Evidence shows that some collectives benefit more from remaining informal and organizing through social platforms like WhatsApp and Facebook groups. This phenomenon could be examined in the context of Latin America's institutional weakness and informal markets. Understanding these dynamics can shed light on the broader socioeconomic impacts of the gig economy and inform policies aimed at integrating informal work into more formalized structures (see Brinks et al., 2020).

In conclusion, these future research directions emphasize the need for a multifaceted approach to studying platform regulation in Latin America, opening paths for in-depth dialogues between institutional approaches in political science and classic discussions of Science and Technology Studies (STS) in the region.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Funding

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Supplemental material

Supplemental material for this article can be accessed here: https://figshare.com/s/cdccf37643bd35cadea8

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