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Transport-related social exclusion in Latin America: a multilingual scoping review of modal choice and travel behaviour

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ABSTRACT

Transport-related social exclusion (TRSE) has emerged as an increasingly pressing concern in cities across the Global South, where rapid urbanisation converges with stark spatial inequalities, deeply entrenched socio-economic disparities, and fragmented transport systems. This review focuses on Latin American (LATAM) cities, which are particularly illustrative of these dynamics, and provides a new lens on behavioural factors influencing modal choice and their role as determinants of TRSE. In addition to challenging prevailing narratives that champion infrastructure and accessibility inequities while overlooking behavioural and experiential constraints, the article also employs a more inclusive approach to literature review, incorporating multilingual sources from the SciELO database, which includes extensive scholarly work from LATAM that rarely appears in well-consolidated indexes such as Web of Science or Scopus. The thematic synthesis ($n=96$) uncovers structural socio-spatial inequalities prevalent in LATAM urban contexts, including gendered security risks, social stigmas affecting marginalised populations, and socio-spatial segregation phenomena that nurture specific travel behaviours independent of transport infrastructure availability and affordability. The combination of indexed and non-indexed databases further reveals nuanced discrepancies in the transport modes considered and the target groups highlighted, offering a more comprehensive understanding of the contextual particularities of TRSE in LATAM that would otherwise be fragmentary if only English-based, indexed literature were considered. Building on this synthesis, a conceptual framework is developed that integrates behavioural constraints, structural inequalities, and socio-spatial dynamics, aiming to sketch

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recommendations for planning practice and policymaking, tailored to LATAM contexts.

1. Introduction

Transport-related social exclusion (TRSE) has garnered increasing attention in academic research over the past decade. While TRSE is often used interchangeably with the earlier term of transport disadvantage, it is important to emphasise that the former establishes a clearer interconnection between access to transport and the level of social inclusion (i.e. the opportunity to participate fully in society, have respected rights, and access what is necessary to live with dignity). A transport-disadvantaged individual can be socially included, or a socially excluded person could enjoy good access to transport (Currie & Delbosc, 2010; Lucas, 2012). According to Kenyon et al. (2002, p. 210), TRSE refers to

“the process by which people are prevented from participating in the economic, political, and societal life of the community because of reduced accessibility to opportunities, services, and social networks, due in whole or part to insufficient mobility in a society and environment built around the assumption of high mobility.”

Originating in UK scholarship in the early 2000s, including the seminal study of the UK Social Exclusion Unit (2003), TRSE has since attracted growing scholarly attention, and while a developing body of literature is beginning to address Global South contexts, empirical evidence remains predominantly drawn from the Global North (Lucas, 2019; Vecchio, Tiznado-Aitken, et al., 2020).

This disparity is problematic given that the factors influencing transport access and usage in Global South contexts, such as Latin America (LATAM), diverge substantially from those in the Global North. In LATAM, fragmented transport systems, stark spatial inequalities, and deeply entrenched socio-economic disparities converge to constrain mobility and access to opportunities, with disadvantaged populations bearing the greatest burden (de Sá et al., 2015). These issues are further amplified by the region’s rapid urbanisation over the past four decades (United Nations: Economic Commission for Latin America and the Caribbean, 2017). Accelerated and often unplanned urban growth has resulted in socio-spatial segregation, inadequate public services, and heightened security concerns, all of which have intensified dependence on motorised transport and further marginalised those with limited mobility options (Bertazzo et al., 2020; Rodríguez-Vignoli & Rowe, 2018).

While existing research from LATAM cities has largely focused on transport disadvantage and TRSE through the lens of infrastructure provision and accessibility inequities, comparatively little attention has been paid to the structural and systemic factors that influence travel mode choice and everyday mobility. This article reviews the literature on TRSE in LATAM urban contexts, with particular focus on how modal choice and travel behaviour shape access to urban opportunities for marginalised groups. This review makes three contributions to the field of transport equity.

First, it advances theoretical understanding by linking behavioural determinants of transport mode choice, such as affordability, personal security, risk of harassment,

especially amongst women, and social stigma, especially for residents of informal settlements, with broader processes of social exclusion in LATAM urban contexts. In doing so, it challenges dominant paradigms that emphasise infrastructure provision over lived experience and behavioural constraints. Second, it introduces a methodological innovation by incorporating underrepresented literature from the SciELO database, including valuable empirical work from LATAM scholars mostly writing in Spanish and Portuguese. This multilingual, multi-database strategy enables a more inclusive and regionally grounded evidence base, addressing the epistemic bias that often marginalises Global South contributions in transport research. Third, it develops a conceptual framework that connects behavioural factors with structural inequalities, synthesising how affordability constraints, gendered insecurity, social stigma, and socio-spatial segregation interact to shape TRSE in LATAM, dimensions that tend to be examined in isolation in the existing literature, limiting the cumulative understanding of exclusion processes in the region. By highlighting knowledge produced in LATAM, this review contributes to the broader goal of decolonising transport studies and offers a pathway for future research that is both context-sensitive and globally informed.

The next section outlines the methodological approach to literature synthesis, emphasising the context-sensitive aspects introduced to improve inclusivity and broaden the epistemological scope of transport equity research. Following this, the third section introduces the conceptual framework that links behavioural determinants of transport mode choice with processes of social exclusion in LATAM contexts. The fourth section examines behavioural factors affecting modal choice and how they shape spatial and structural inequalities in LATAM cities, while sketching the implications for planning practice and policymaking, and discussing study limitations. Finally, the fifth section reflects upon the methodological approach and findings, suggesting directions for future research.

2. Research approach: multilingual scoping review

This study aims to challenge dominant narratives and broaden the epistemological scope of transport equity research, which has been strongly shaped by Global North perspectives. Therefore, this review proposes a more inclusive and context-sensitive approach to literature synthesis, to map the existing body of evidence and promote greater epistemic diversity in the field. The methodological novelty lies primarily in its inclusion of literature from often overlooked databases, such as SciELO, which contains a substantial body of locally produced research that rarely appears in consolidated indexes such as Web of Science (WoS) and Scopus. Our approach adopts a multilingual search strategy, systematically reviewing literature in English, Portuguese, and Spanish (all of which at least two researchers speak natively or fluently) to ensure comprehensive coverage of regional scholarship.

To this end, we conducted a comprehensive scoping review of both indexed and non-indexed open-access literature on transport equity in the Global South, with a specific focus on LATAM and theoretical frameworks and intersectional dimensions of TRSE. Searches were performed across SciELO and WoS databases, using a multilingual query strategy to ensure broad regional representation and identify relevant publications from 2015 to 2025. Search terms combined keywords and Boolean operators as follows: (*transport* OR *mobility* OR *“travel behavio*”*) AND (*exclusion* OR *poverty* OR

inequality OR *inequity* OR *equity* OR *marginaliz** OR *vulnerab** OR *disadvantage**) AND (“*Latin America*” OR *Caribbe** OR *Argentina* OR *Brazil* OR *Bolivia* OR *Chile* OR *Colombia* OR “*Costa Rica*” OR *Cuba* OR “*Dominican Republic*” OR *Ecuador* OR “*El Salvador*” OR *Guatemala* OR *Haiti* OR *Honduras* OR *Mexico* OR *Nicaragua* OR *Panama* OR *Paraguay* OR *Peru* OR *Uruguay* OR *Venezuela*). The search terms were also translated into Portuguese and Spanish.

This review was conducted over a six-week period from September to October 2025. It relied on an adapted version of PRISMA 2020 guidelines and the PRISMA-Equity (Welch et al., 2015) for reporting equity-focused reviews, targeting open-access records as a strategy to promote equitable access to knowledge and inclusivity of diverse contexts. The proposed multilingual, open-access review reflects a commitment to epistemic equity, enabling the discussion of findings from often underrepresented studies to a broad audience. The PRISMA flow diagram (Figure 1) summarises the study identification, screening, eligibility, and inclusion process.

A total of 982 records were identified for screening, with 752 identified on the WoS and 230 on the SciELO platform. Subsequently, the screening followed a two-step approach focused on the assessment of the titles and abstracts. The first assessment excluded a total of 858 records considered out of scope. This high number of exclusions was primarily driven by the term “mobility” (and its equivalents in Portuguese and Spanish), which, in

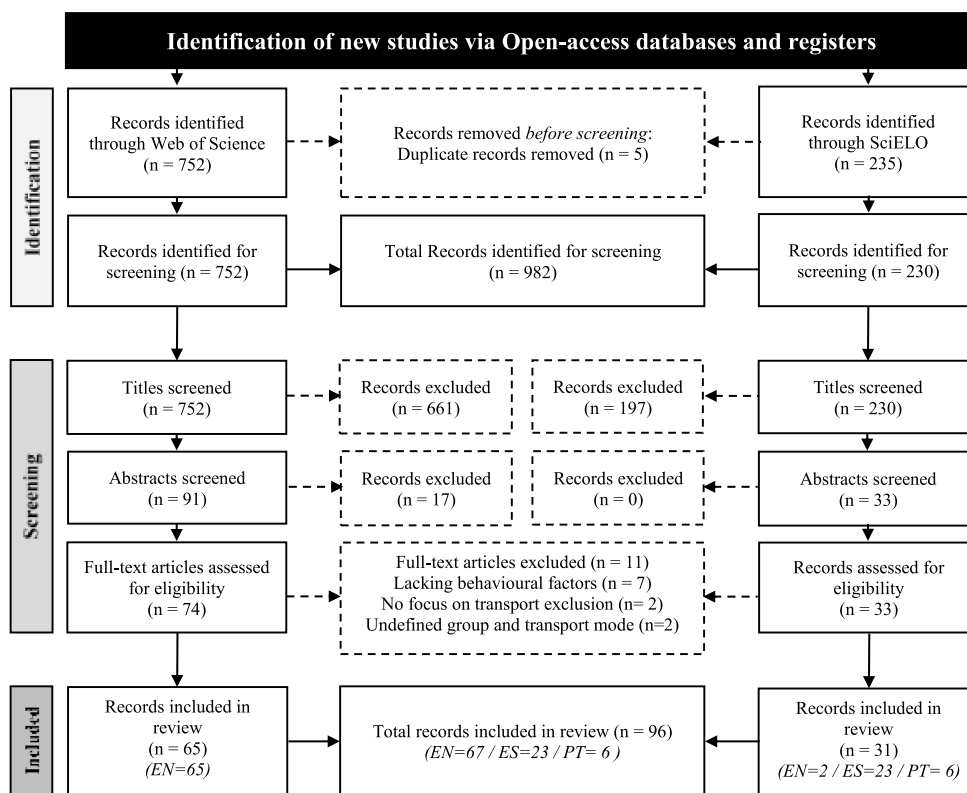


Figure 1. PRISMA flow diagram adapted from: (Page et al., 2021).

the LATAM context, frequently retrieves literature associated with regional migration and human displacement rather than urban transport. Throughout the abstract assessment, 17 records were excluded as they focused on the pandemic and post-pandemic effects on mobility and social exclusion. Among the 107 full-text articles assessed for eligibility, 11 were excluded due to limited focus on TRSE ($n = 2$), undefined target groups and transport mode ($n = 2$), and the lack of focus on behavioural factors ($n = 7$). Henceforth, this review examined 96 open-access full-text articles, 67 published in English, 23 in Spanish, and 6 in Portuguese.

Data extraction was conducted using a standardised spreadsheet designed to ensure consistency across the review team comprising five researchers. The assessment was organised according to language proficiency (i.e. Portuguese, Spanish, and English) to facilitate the accurate interpretation of studies published in multiple languages. A pilot extraction was performed on a small sample to refine the proposed coding framework and taxonomy, with the discrepancies resolved collectively. Each reviewer extracted the records according to nine topics, derived from the research objective and pre-defined by the authors to serve as a structured analytical framework: (1) geographical scope, (2) data type, (3) methodology, (4) target groups, (5) transport modes, (6) behavioural factors, (7) social exclusion determinants, (8) main findings, and (9) gaps and limitations. To ensure reliability, the review team conducted three rounds of cross-checks focused on taxonomic alignment and procedural coherence.

The team proceeded with the consolidation and synthesis of the collected literature to facilitate intersectional analysis and the identification of recurring patterns across the multilingual literature, focusing on overlaps and mismatches between studies from SciELO and WoS. Adopting the thematic analysis framework of Braun and Clarke (2006), the extracted data underwent a two-phase analytical process. First, an inductive thematic synthesis of explicit and latent codes identified the primary factors affecting modal choice in LATAM, grouping them into emergent themes based on terminology used in the literature. Second, these themes were triangulated against established theoretical frameworks on TRSE and Transport Poverty (Lucas, 2006; Lucas et al., 2016; Preston & Rajé, 2007). This synthesis process informed the development of a novel conceptual framework (Section 3), grounded on empirical results, that visually and conceptually illustrates the intersection of transport equity-related domains in LATAM, offering a comprehensive description of the evidence base and a guide for future research directions.

Whereas the multilingual open-access strategy aligns with PRISMA-E principles, we acknowledge several caveats. First, this approach may have excluded relevant publications from subscribed journals and grey literature, potentially limiting comprehensiveness. Similarly, studies published in other languages were not captured. Yet, the proposed methodology is grounded in epistemic equity and committed to reproducibility and transparency to mitigate potential research gaps.

3. Conceptual framework

Based on the thematic synthesis of the reviewed literature, this paper develops a novel conceptual framework (Figure 2) inductively, which connects behavioural factors with TRSE across four main dimensions: (1) *Accessibility*, (2) *Availability*, (3) *Affordability*, and

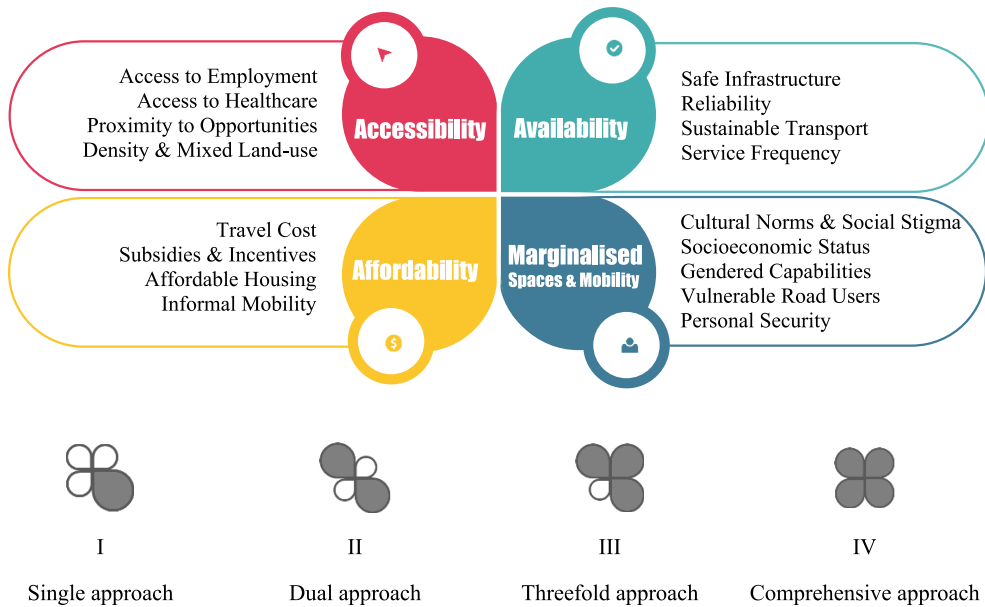


Figure 2. Conceptual framework of TRSE dimensions and associated factors shaping modal choice in LATAM.

(4) *Marginalised Spaces & Mobility*. This model aims to capture the current state of knowledge and identify gaps where empirical research remains limited.

The classification of dimensions followed a dual-coding approach, considering both explicit and latent descriptors. Studies employing standardised terminology, such as those operationalising *Accessibility*, were assigned to that dimension. Conversely, latent coding was used to group papers by their underlying phenomena. For example, *Availability* clustered research on spatial/temporal transport supply, while *Affordability* aggregated studies on economic barriers. Finally, the *Marginalised Spaces and Mobility* dimension emerged from a contextual synthesis of demographic vulnerability and spatial-social exclusion.

The conceptual framework is represented as a four-leaf clover (Figure 2), with each leaf or dimension containing a specific set of underlying factors shaping modal choice (Table 2), offering a novel analytical lens for understanding the behavioural drivers and systemic determinants of TRSE in LATAM.

This conceptual framework aligns with established theoretical frameworks, including the policy-based dimensions of Preston and Rajé (2007) (e.g. transport costs, proximate facilities, and income levels). Furthermore, our findings map onto the systemic factors identified by Lucas (2012), including inaccessibility, transport, and social disadvantage. While our framework adopts recognised taxonomies of transport poverty (e.g. affordability and accessibility) (Lucas et al., 2016), it critically extends them by incorporating spatial and social specificities of LATAM.

The conceptual framework identifies four degrees of interaction between the thematic dimensions. When adopting a *single approach*, studies deal with a unique dimension of analysis. This category assembles 23 reviewed papers. The *dual approach* is more

Table 1. Literature sorted into transport-related social exclusion dimensions.

Approach	Literature	Transport-related social exclusion dimensions
I	Full-text articles: 23 WoS: 18 / SciELO: 5	Marginalised Spaces & Mobility: 17 Accessibility: 4 Availability: 2
II	Full-text articles: 43 WoS: 27 / SciELO: 16	Marginalised Spaces & Mobility + Availability: 19 Marginalised Spaces & Mobility + Accessibility: 12 Marginalised Spaces & Mobility + Affordability: 8 Accessibility + Availability: 4 Availability + Affordability: 1
III	Full-text articles: 28 WoS: 18 / SciELO: 10	Marginalised Spaces & Mobility + Accessibility + Availability: 14 Marginalised Spaces & Mobility + Accessibility + Affordability: 8 Marginalised Spaces & Mobility + Affordability + Availability: 5
IV	Full-text articles: 2 WoS: 2 / SciELO: 0	Marginalised Spaces & Mobility + Accessibility + Availability + Affordability: 2

Table 2. Summary of factors affecting the modal choice in LATAM.

Dimensions	Factors	Main findings
Marginalised Spaces and Mobility	<i>Cultural norms & Social stigma</i>	Social, political norms, and symbolic motives contribute to car dependency and the invisibility of the mobility needs and barriers faced by those living in the outskirts, slums and rural areas.
	<i>Socioeconomic status</i>	Low-income and unemployed individuals are deprived of efficient and affordable transport systems to reach opportunities.
	<i>Gendered capabilities</i>	The perceived risk of violence and harassment negatively impacts women's daily mobility. Women often pursue chained trips and caregiving activities.
	<i>Vulnerable road users</i>	Pedestrians, bicycle users, the elderly, children, people with disabilities, and women have more difficulties accessing public transport and participating in activities.
	<i>Personal security</i>	Perceived insecurity in hostile urban environments negatively influences travel experiences.
Accessibility	<i>Access to employment</i>	The highest employment accessibility is within central areas. Low-income groups have low accessibility to job opportunities.
	<i>Access to healthcare</i>	Uneven distribution of health facilities affects vulnerable individuals in the outskirts, low-density, and rural areas.
	<i>Proximity to opportunities</i>	The limited access to basic opportunities frames mobility patterns in peripheries.
Availability	<i>Density & Mixed land-use</i>	Monocentric urban forms influence the distribution of urban amenities, reducing accessibility at the local level.
	<i>Safe infrastructure</i>	The lack of safe pedestrian and bicycle infrastructure hinders sustainable mobility. Increasing traffic incidents among men, active travellers, and motorcyclists.
	<i>Reliability</i>	The lack of reliable transport services in peripheral and low-density areas disproportionately affects people experiencing poverty.
	<i>Sustainable transport</i>	The lack of sustainable transport options hinders the mobility capabilities of those without access to private vehicles.
Affordability	<i>Service frequency</i>	People living on the outskirts experience longer travel times, which limit access to urban opportunities.
	<i>Travel cost</i>	Peripheral and marginalised populations spend disproportionately more on transport, deepening poverty.
	<i>Subsidies & incentives</i>	Subsidies increase the number of trips, positively impacting low-income individuals.
	<i>Affordable Housing</i>	The lack of affordable housing displaces families to peripheral and transport-deprived areas.
	<i>Informal Mobility</i>	Informal transport provides affordable and flexible options in the absence of formal transport systems.

common in the current review, encompassing 43 papers. The *threefold approach* intersects three distinct clusters, representing 28 records. Finally, the intersection of the four identified dimensions represents a *comprehensive approach* and was identified only in two indexed studies. [Table 1](#) below provides an overview of how the reviewed literature addresses the identified themes.

3.1. Accessibility

The earliest definition of accessibility was introduced by Hansen (1959), who defined accessibility as the ease of access to a desirable set of destinations. This concept encompasses both the spatial distribution of activities and the available transport systems, as well as individual and temporal conditions, outlining the maximum set of opportunities one person can achieve (Geurs & van Wee, 2004).

This literature review highlights four critical land-use patterns under the accessibility dimension. Central to this is the role of urban *density and mixed land use*, which can minimise travel distances by providing *proximity to opportunities*. Consequently, integrated land-use planning in LATAM could serve as the primary driver for ensuring equitable *access to employment and healthcare*, which is compromised in fragmented or mono-functional urban sprawls.

Findings suggest that urban planning prioritised private development and road infrastructure, resulting in spatial fragmentation that isolates marginalised groups (Díaz Pabón & Palacio Ludeña, 2021; Guevara Romero et al., 2022). The rapid urban sprawl led to an imbalance in the distribution of services and infrastructure (Covarrubias & Reillo, 2022), which perpetuates the marginalisation and segregation of the poorest and non-motorised individuals (Reis & Vérias, 2024). When equity considerations are not incorporated into public transport planning, the distribution of investments may reinforce socio-spatial inequalities (de Alba-Martínez et al., 2020; Vecchio, Porreca, et al., 2020). For example, inefficient public transport may result in longer travel and waiting times, negatively affecting poorer people, women, migrants, and indigenous groups (Calonge Reillo & Aceves Arce, 2019; González et al., 2025).

Low-income populations in LATAM often balance trade-offs between cost, time, comfort, and safety. In this context, informal transport emerges as a suitable option for everyday activities, offering both flexibility and coverage that formal public transport networks cannot provide (Oviedo Hernandez & Titheridge, 2016). When it comes to sustainable and alternative modes, active travellers face long, unsafe journeys due to barriers and poor infrastructure, resulting in deep inequalities in accessibility and safety (Guevara Romero et al., 2022). Overall, enhancing accessibility can positively impact well-being, reducing both objective and subjective inequalities (Díaz Pabón & Palacio Ludeña, 2021; Pareja Pineda et al., 2021).

3.2. Availability

Availability refers to the presence, functioning, and spatial distribution of *safe transport infrastructure* and mobility services. In LATAM, availability is deeply intertwined with accessibility and affordability, shaping who can reach opportunities and under what conditions. Unequal distributions of infrastructure frequently produce socio-spatial

mismatches, reinforcing mobility gaps between socio-economic groups (Badland et al., 2014; Escobar et al., 2022; Heroy et al., 2022). Transport infrastructure forms a complex system that couples human activities with social, economic, and environmental structures (Wang et al., 2018), meaning gaps in availability have cascading effects on urban equity.

Reliability is a defining yet often overlooked dimension of availability, particularly in frequency-based LATAM systems (Soza-Parra et al., 2022). Reliability encompasses the certainty of travel time, waiting time, and in-vehicle comfort. Users are willing to travel longer to avoid irregular headways, making this a key predictor of modal preference (Soza-Parra et al., 2022). Segregated bus corridors can significantly improve reliability by reducing both average travel times and travel time variability (Soza-Parra et al., 2022).

While the reviewed sources do not explicitly analyse infrastructure for informal modes, indirectly related findings suggest that informality in services and land use shapes mobility environments in low-income areas (Heroy et al., 2022). Formal analyses focus primarily on public transport, car, rail, walking, cycling, and taxi (Escobar et al., 2022; Heroy et al., 2022; Soza-Parra et al., 2022), indicating a research gap on how informal systems contribute to or compensate for deficits in availability.

3.3. Affordability

Transport affordability is a central dimension of transport disadvantage, shaping who can access opportunities and under what conditions. For lower-income groups, *travel costs* impose substantial financial strain and restrict access to education, employment, health-care, and social life (Guzman & Oviedo, 2018; Litman, 2016). Evidence consistently shows that low-income households allocate a disproportionate share of their income to mobility, making affordability a regressive burden in many contexts (Guzman & Oviedo, 2018; Venter, 2011).

Households with limited resources often relocate to more *affordable housing* in peripheral areas, farther from major job and service hubs, generating longer travel times and lower accessibility (Guzman, Cantillo-Garcia, Oviedo, et al., 2023; Oviedo et al., 2019). Such spatial and financial constraints reinforce a cycle in which people must prioritise income-generating trips over other essential or discretionary activities, deepening exclusion and time poverty (Oviedo et al., 2019). For many low-income women, this is compounded by household and caregiving responsibilities, leading to mode choices that are cheaper but slower and more burdensome (Guzman, Cantillo-Garcia, Oviedo, et al., 2023; Venter, 2011).

Subsidies and incentives are a widely used policy tool intended to reduce these inequities. Demand-side subsidies targeted directly at low-income users tend to outperform supply-side subsidies in terms of distributional outcomes (Serebrisky et al., 2009). Bogotá's public transport subsidy illustrates this potential, where beneficiaries increased their monthly public transport trips, and subsidy design reduced accessibility gaps between high- and low-income groups (Guzman & Hessel, 2022; Guzman & Oviedo, 2018). Similar findings in Santiago suggest that subsidised fares can enhance accessibility for older low-income people more effectively than infrastructure expansion alone (Vecchio et al., 2024).

Affordability challenges also intersect with car dependence, itself a component of transport poverty (Blandin et al., 2024). In contexts where public transport is limited,

households may be pushed into “forced car ownership” to meet basic mobility needs (Blandin et al., 2024; Pyrialakou et al., 2016; Tiznado-Aitken et al., 2022). The financial burden of purchasing and operating a car becomes especially critical for low-income households (Venter, 2011). Even middle-income households in car-dependent suburbs experience heightened financial vulnerability as they internalise the mobility costs dictated by their residential location (Blandin et al., 2024; Tiznado-Aitken et al., 2022). Those who cannot afford a vehicle face reduced accessibility and exclusionary mobility patterns, often relying on *informal mobility* options (Lucas, 2011; Venter, 2011).

Ultimately, transport affordability is not only an economic constraint but a determinant of lived mobility experiences. When faced with high fares, limited service, or unsafe conditions, individuals must negotiate trade-offs between cost, time, comfort, and security (Guzman, Cantillo-Garcia, Oviedo, et al., 2023; Oviedo et al., 2019; Oviedo Hernandez & Titheridge, 2016).

3.4. Marginalised spaces and mobility

In LATAM, a complex layer of human and social factors dictates actual participation in the transport systems, including *socioeconomic status*, which determines the financial threshold for accessing formal and informal networks. This exclusion is often reinforced by *cultural norms and social stigma*, with certain modes of transport (such as buses or cycling) being devalued, creating psychological barriers to use. Moreover, mobility is further mediated by *gendered capabilities*, where the specific needs and travel patterns of women, often characterised by trip-chaining and caregiving, are frequently overlooked in planning practice.

Areas at risk of TRSE in LATAM extend beyond city centres and are often explored at a metropolitan scale (Pareja Pineda et al., 2021; Quijada-Alarcón et al., 2024; Reis & VÉRAS, 2024), encompassing marginalised communities in peripheral neighbourhoods and low-density areas (Belogi & Mera, 2022; Covarrubias & Reillo, 2022; Ypanaque Ancajima, 2024) as well as rural areas and remote zones (Cruz et al., 2022; Díaz Pabón & Palacio Ludeña, 2021; Pérez Stéfanov, 2018).

The assessed studies examined the role of land-use and transport systems in the mobility patterns of socioeconomically *vulnerable road users* (i.e. low-income, unemployed, informal workers, youth and illiterate) (Gallego Méndez et al., 2023; Guevara Romero et al., 2022; Guzman, Cantillo-Garcia, Arellana, et al., 2023; Moreno Alba et al., 2021), minority groups (i.e. ethnic groups, indigenous peoples, immigrants) (Correia Junior et al., 2025; Díaz Pabón & Palacio Ludeña, 2021; Rodrigues et al., 2021), and individuals sensitive to road safety and *personal security* (i.e. women, elderly, caregivers, people with disabilities and children) (Aguilar-Farias et al., 2019; Contreras et al., 2023; Santana Palacios et al., 2020).

The phenomenon of socio-spatial segregation resulting from rapid urban sprawl hinders alternative forms of mobility and exacerbates the use of private motorised vehicles among middle and upper-income classes (Cáceres Seguel, 2015; Oviedo et al., 2019; Vecchio, Porreca, et al., 2020). Previous studies suggested that in car-oriented societies, monocentric land-use development leads to an unequal distribution of services and activities, disproportionately affecting those who have no access to private vehicles. Hence, active travellers in car-dependent areas not only hold negative perceptions towards the quality of the built environment (Borello Vargas et al., 2025) but also have lower mobility capabilities and social autonomy (Alvarez-Lobato et al., 2018).

In LATAM, unemployment and work informality play an important role in the modal choice of marginalised individuals located in peripheral areas and slums (Reynaga & Vanessa, 2022). Due to limited economic conditions, such individuals are greatly influenced by housing prices, which ultimately determine their residential location and mode of transport. Displaced people living on the outskirts and remote areas (Cáceres Seguel, 2015) often have limited access to mobility infrastructure and services, which hinder their ability to conduct daily activities, resulting in longer chained commuting trips (Barboza et al., 2024; Reynaga & Vanessa, 2022). The reviewed literature also highlights the complex mobility patterns of caregivers and people with disabilities, who are influenced by perceived comfort and safety (Santana Palacios et al., 2020).

3.5. Indexed & non-indexed database mismatch

A core aim of this review is to understand behavioural factors and mode choice as determinants of TRSE in LATAM, drawing on multilingual evidence that combines SciELO and WoS databases. This subsection examines what is gained and what is lost when analyses rely solely on internationally indexed, English-language sources, with focus on thematic dimensions of the conceptual framework, type of analytical approach, target groups, and transport modes (Figure 3).

Despite important divergences, the two databases share a set of common ideas. In both, *Marginalised Spaces & Mobility* is almost ubiquitous, signalling a broad concern with socio-spatial segregation and everyday constraints on movement. *Availability* and *Affordability* also have similar weights across the databases, and income and gender appear as the most frequently considered social markers. This suggests that, irrespective

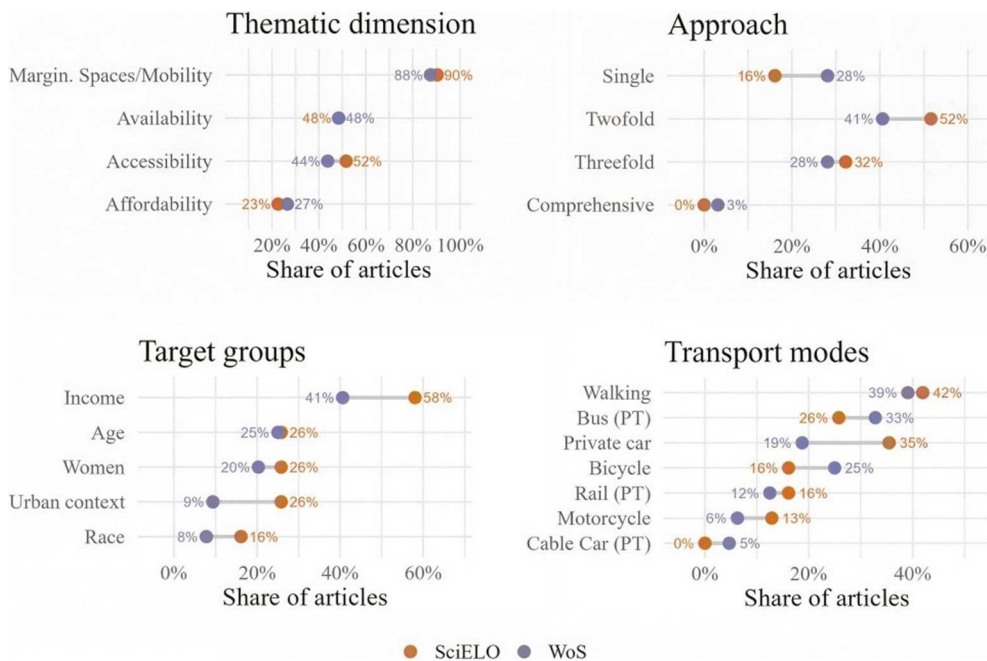


Figure 3. Coverage of key aspects for TRSE in LATAM between SciELO and WoS.

of indexing status, LATAM scholarship converges around a set of key concerns about how exclusion is produced and reproduced.

Differences emerge more clearly in the coverage of the thematic dimensions. SciELO assigns slightly greater emphasis to *Accessibility*, around 52% of articles compared with 44% in WoS, echoing locally grounded debates on unequal access to services and urban centralities. While both databases emphasise *Marginalised Spaces & Mobility*, SciELO more often combines this dimension with *Accessibility* and *Affordability*, whereas WoS tends to examine them in a more segmented manner. Table 1 shows that SciELO contains a higher share of dual and threefold approaches, while WoS includes more single-dimension studies. Yet, this review found two comprehensive studies in the indexed WoS database. Regional journals, therefore, appear more inclined towards integrated perspectives that resonate with the proposed framework, while indexed outlets still operate through narrower analytical windows.

The assessment of target groups also differs across databases. Income is more prevalent in SciELO, with 58%, compared with 41% in WoS. Urban context and race, including peripheral, informal, rural, and peri-urban settings and racialised inequalities, are clearly under-represented in WoS, although they appear in a non-negligible share of SciELO articles. Age and gender are similarly covered in both. This pattern indicates that SciELO captures LATAM contextual markers more explicitly, such as socio-spatial segregation and the racialisation of poverty, whereas WoS tends to focus on more universal categories like income and gender. These markers are central to understanding how travel behaviour and mode choice might be structured in LATAM contexts.

Regarding modes of transport, both databases highlight walking and buses, but with distinct emphases. WoS devotes more attention to bicycles and rail, which align with global sustainability and mass transit agendas. SciELO, in turn, focuses more strongly on private cars and especially motorcycles, as well as cable cars in informal settlements. Indexed literature, therefore, tends to mirror narratives of global “best practices,” whereas SciELO sheds light on everyday “survival mobilities” based on low-cost mobility, motorcycles, informal transport, and constrained walking. These differences have direct implications for how behaviour and mode choice are modelled.

Beyond quantitative differences, the identified mismatch between databases reveals an epistemological gap. While indexed literature tends to reflect an Anglocentric perspective focused on Global North sustainability agendas, SciELO may act as a critical counter-hegemonic repository. Considering Google Scholar’s role in broadening multidisciplinary reach, as discussed by Gusenbauer (2019) and Benita (2021), the SciELO database seems to expand the scope of indexed literature by capturing regional scholarship that prioritises local socio-spatial realities, such as informal transport and territorial precariousness, which are frequently underrepresented in traditional Western-centric indexes. Ultimately, these mismatches may signal a structural hierarchy in academic production: whereas journals in indexed literature seem to prioritise research questions aligned with globalised sustainability metrics and transferable policy models, local journals (SciELO) tend to validate inquiries rooted in the immediate socio-spatial crises of LATAM contexts. This divergence confirms that the two bodies of literature operate under distinct research priorities and target different scholarly audiences: one focused on global trends and the other on regional realities.

4. Transport-related social exclusion in Latin America

This literature review examined TRSE in LATAM with a specific focus on behavioural factors influencing modal choice as well as the role of spatial and social structural inequalities in reinforcing this phenomenon (Table 2).

4.1. Behavioural factors and modal choice

Building on the conceptual framework, this section examines how different transport modes shape behavioural constraints and modal choice in LATAM. These behavioural constraints are not experienced uniformly. For low-income residents and informal workers, constrained modal choice often means reliance on walking and informal transport as strategies of last resort rather than preference. For women and caregivers, it means negotiating multiple chained trips under conditions of insecurity and time poverty. For older adults, children, and people with disabilities, it means confronting built environments and service designs that render independent mobility precarious or impossible.

Across the reviewed articles, public transport and active modes emerge as the main arenas in which TRSE is produced and negotiated, while individual motorised modes are discussed less frequently despite their central role in everyday mobility strategies. Walking is frequently depicted as a dimension of social exclusion, often associated with long distances and heavy time burdens. Blanco and Bosoer (2022) document the longest commuting distances faced by domestic workers who walk to peripheral jobs, while Zúñiga-Olave and Herrmann-Lunecke (2022) describe multiple care-related trips undertaken on foot that leave many women without time for leisure and workouts. In these cases, walking is not framed as a health-promoting behaviour but as a constrained and exhausting strategy to cope with insufficient and unaffordable motorised options.

Cycling is commonly portrayed as a promising sustainable alternative, yet its benefits are unevenly distributed across social groups. Mora and Moran (2022) show how restrictions on bicycle types in bike-sharing systems in Santiago reduce women's use of these services, illustrating how design choices interact with gendered mobility patterns. Oviedo and Sabogal-Cardona (2022) analyse shifts from public transport to cycling in Bogotá, pointing to societal gains in terms of sustainable accessibility, particularly for middle-income groups. These studies suggest that cycling is frequently framed as an aspirational mode, with access conditioned by gender, income, and safety concerns.

Public transport remains the backbone of research on TRSE in LATAM. Studies underline not only its role in providing or denying access, but also its symbolic and social dimensions. Guzman, Cantillo-Garcia, Arellana, et al. (2023), for instance, highlight how cable car investments can generate social capital in hillside settlements, improving perceived integration with the rest of the city and enriching mode-choice modelling. Yet, there is still a lack of evidence on travel behaviour factors and the societal impact of aerial cable cars in LATAM (Cardona-Urrea et al., 2024). Other contributions emphasise gender-differentiated assessments of bus performance, including respect for traffic laws, punctuality, and service frequency, which strongly influence women's perceived safety and comfort (Freitas et al., 2023).

Several studies also address cars and motorcycles as both instruments of coping and sources of vulnerability. Research on the rapid increase in motorcycle-related fatalities in Colombia and Brazil (Corgozinho et al., 2018; Murillo-Hoyos et al., 2023) reveals how low-income workers are pushed towards inexpensive but risky modes that expose them to disproportionate injury and death. Calonge Reillo (2019), examining a peripheral municipality of El Salto in the Guadalajara Metropolitan Area, shows that limited access to essential services coexists with moments of agency, resilience, and re-appropriation of urban space, where residents rely on a mix of informal motorised services and walking. These findings indicate that individual motorised modes play an ambivalent role in LATAM, simultaneously expanding short-term opportunities and deepening long-term inequalities through financial, safety, and environmental burdens.

4.2. Spatial and social structural inequalities

TRSE in LATAM is shaped by structural socio-spatial inequalities, while both objective urban features and subjective perceptions significantly influence the well-being of marginalised, socioeconomically disadvantaged, and vulnerable individuals (Pareja Pineda et al., 2021). Empirical evidence suggests that these groups are greatly affected by local accessibility conditions (e.g. access to opportunities and transport services), affordability and availability of different transport options, which ultimately determine their modal choice and mobility behaviour.

These structural inequalities are not merely the product of transport systems in isolation but are fundamentally shaped by the patterns of urban development that precede and condition them. In LATAM, land-use decisions, including the concentration of employment and services in central areas, the peripheral location of affordable housing, and the prioritisation of road infrastructure for private vehicles, have produced urban forms that systematically constrain the mobility of marginalised populations, independent of transport supply.

Furthermore, TRSE is exacerbated by the often informal nature of urban growth in LATAM. Planning tools frequently fail to regulate these dynamics, resulting in a persistent mismatch between residence and opportunity. In these contexts, transport infrastructure typically arrives only after areas are consolidated, steered more by market-driven or informal processes than by public-sector oversight (Oviedo Hernandez & Titheridge, 2016). For the residents of these areas, TRSE is not just a lack of transit, but a structural consequence of an urban form that institutionalises exclusion through delayed and reactive planning.

Significant inequities in access to urban opportunities due to spatial barriers and a lack of well-connected transport infrastructure have been identified in this literature review (D. A. Bautista-Hernández, 2020; D. Bautista-Hernández & Suárez Lastra, 2020; González et al., 2025; Grande-Ayala, 2024). In Recife, Brazil, peripheral areas with higher concentrations of low-income groups exhibit lower accessibility conditions to opportunities, compared to car users (Cui et al., 2022). Likewise, in Santiago de Cali, Colombia, peripheral households have inadequate transport provision and face disproportionate barriers to employment, health, and education opportunities (Gallego Méndez et al., 2023). Individuals located in remote and rural areas in the Amazon, Brazil, struggle to access health units due to limited public transport availability and flexible schedule (Garnelo et al., 2018).

Scholars have highlighted a significant gender gap in mobility, particularly in relation to caregiving activities. Women who shoulder caregiving responsibilities tend to make multiple trips both within and beyond their neighbourhoods, often relying on walking as their primary mode of transport (Zúñiga-Olave & Herrmann-Lunecke, 2022). Evidence from Colombia suggests that women's mobility is shaped by multiple forms of exclusion, including sexual violence, harassment, job insecurity, and an unequal burden of care. These subjective factors contribute to the informal and often precarious nature of their daily movements (Buchely et al., 2021).

Travel experiences are not homogeneous, and everyday mobility depends on several factors, including daily tasks, socioeconomic status, household composition, and residence location. Accordingly, previous studies demonstrate that subjective well-being is not determined solely by objective features of the built environment but is strongly influenced by subjective perceptions of safety, aesthetics, and accessibility (Salazar, 2021). Inequities in the urban form and distribution of mobility infrastructure contribute to lower well-being, particularly among low-income, vulnerable, and peripheral populations (Pareja Pineda et al., 2021).

The reviewed literature indicated that commuting times are inversely correlated with income (Moreno Alba et al., 2021; Reis & Vêras, 2024), with the poorest deciles experiencing longer travel times and greater distances, particularly those residing in unplanned, informal settlements (Guzman, Cantillo-Garcia, Arellana, et al., 2023). In Santiago, Chile, wealthier households benefit from shorter travel times, higher motorisation levels, and better access to opportunities, whereas low-income individuals not only have insufficient access to feasible alternative modes but also experience the negative burdens caused by high motorisation and elevated transport costs (Jara-Díaz et al., 2016). In other words, willingness to pay for fast and efficient transportation rises with income, whereas the lowest-income deciles tend to accept longer travel times to reduce costs (Guzman, Cantillo-Garcia, Oviedo, et al., 2023). These disparities are further compounded when intersectional vulnerabilities are considered. Older adults and people with disabilities, for instance, face not only longer and more costly trips but also physical barriers in infrastructure that formal accessibility metrics rarely capture. Residents of informal settlements contend with the dual burden of spatial remoteness and social stigma, while Indigenous and racialised populations face additional layers of exclusion tied to cultural marginalisation and the invisibility of their mobility needs in planning frameworks (Aguilar-Farias et al., 2019; Correia Junior et al., 2025).

Transport policy and investment in LATAM overwhelmingly prioritise infrastructure for private cars, reinforcing the exclusion of those without access to motorised vehicles. In response, informal modes of transport have emerged as survival tools for many working-class households, but their proliferation also contributes to increased congestion and deepening inequalities (Yañez Orozco & Bravo Peña, 2022). Likewise, infrastructure availability has a significant impact on the modal choice and mobility patterns of individuals who rely on active modes (Guevara Romero et al., 2022; Oviedo & Sabogal-Cardona, 2022; Pérez Stéfanov, 2018; Stefanidis & Bartzokas-Tsiompras, 2024). The lack of safe cycling infrastructure hinders the adoption of bicycles as a daily mode of transport in car-oriented cultures (Mosquera Becerra, 2016), negatively impacting cyclists' mobility behaviour as they have a higher probability of traffic violations, risk exposure, and increased travel time (Li et al., 2022). Accordingly, a study conducted in Costa Rica

found that local policies tended to overlook utilitarian bicycle riders in favour of recreational ones, which led to an increased shift toward motorcycles to cope with unsafe cycling conditions (Pérez Stéfanov, 2018).

Based on the conceptual framework introduced in this paper, a comprehensive approach to the TRSE phenomenon in LATAM is rarely seen. Overall, the two identified comprehensive studies suggest an unequal distribution of benefits (e.g. accessibility to jobs, affordable options, adequate infrastructure coverage), disproportionately affecting disadvantaged groups. The first study, conducted in Lima, Peru, assessed the impact of travel costs and accessibility levels of bus rapid transit for low-income groups in poor neighbourhoods, considering the role of informal public transport options in reducing inequities. Findings suggest that despite improved access to jobs and reduced travel time, most benefits are concentrated in higher-income areas (Oviedo et al., 2019). The second study examined the role of public bike-sharing systems in promoting modal shift and improving job accessibility in Bogotá, Colombia, considering mobility costs and personal security. The findings indicate that middle-income groups would benefit the most from such investments, whereas low-income groups and women are less likely to shift due to inadequate access to infrastructure, limited efficiency, and insufficient time savings (Oviedo & Sabogal-Cardona, 2022).

4.3. Policy recommendations

A scoping review of this breadth is not positioned to generate evidence-based policy prescriptions; rather, its purpose is to map the conceptual and empirical environment. The recommendations that follow should be read as framework-informed directions, grounded in the recurring patterns identified across the literature. Addressing TRSE in LATAM requires policy responses that move beyond infrastructure-led strategies toward a comprehensive, multi-dimensional approach targeting structural inequalities, behavioural constraints, and socio-spatial dynamics.

First, prioritisation should shift from infrastructure-centred to people-centred planning, beginning with the lived mobility experiences of women, low-income residents, informal workers, people with disabilities, and peripheral residents, with participatory planning tools used to capture everyday constraints invisible in aggregate datasets. Second, affordability should be integrated into core transport policy design, with demand-side instruments such as targeted fare reductions, free transfers, and income-indexed monthly caps.

Third, the availability and reliability of public and informal transport should be strengthened, prioritising network connectivity in peripheral areas and adopting hybrid governance models that formalise safety and labour standards in informal transport while preserving its flexibility and spatial reach. Fourth, coordinated land use and transport planning should reduce socio-spatial segregation, linking affordable housing to high-quality transport corridors and incentivising job creation in peripheral zones.

Fifth, safety, gender equity, and mobility of care should be mainstreamed through universal design and explicit policy recognition of trip chaining, time poverty, and caregiving burdens. Finally, policymakers should adopt multi-dimensional evaluation frameworks assessing equity across the four dimensions simultaneously, incorporating behavioural insights, affordability metrics, subjective perceptions, accessibility modelling, and inter-sectional inequalities, ensuring investments benefit those most at risk of exclusion.

4.4. Gaps and limitations

A major limitation across the reviewed studies concerns the availability, quality, and representativeness of data. Many analyses rely on outdated census or travel survey datasets, which fail to reflect current mobility dynamics, informal transport practices, or the post-pandemic context. Others depend on small or localised samples, limiting statistical power and the ability to generalise results. The under-representation of vulnerable groups, including women, low-income residents, migrants, Indigenous peoples, people with disabilities, and informal workers, creates systematic blind spots in understanding equity and accessibility. Data gaps are compounded by aggregate measures and incomplete variables, which obscure intra-urban inequalities and intersectional patterns. Finally, restricted access to proprietary or digital data sources further limits spatial precision and reproducibility.

Several methodological constraints hinder robust causal inference and comparative analysis. A large share of studies employs cross-sectional designs, offering only snapshots of travel behaviour rather than dynamic trajectories of change. Few include longitudinal data, which restricts understanding of policy impacts or behavioural adaptation over time. Moreover, measurement challenges, including the modifiable areal unit problem, coarse transport analysis zones, or the omission of waiting times and service frequencies, introduce spatial distortions. Collectively, these limitations point to the need for mixed-method, multi-scalar, and temporally sensitive approaches that better capture lived mobility experiences and causal mechanisms.

The context-specific nature of many studies also limits broader applicability. Numerous papers focus on a single city, corridor, or neighbourhood. While such case studies provide valuable insights into local realities, they offer limited potential for cross-country comparison or policy transfer. Even multi-city analyses often remain descriptive or constrained by national data availability. As a result, the literature tends to produce isolated findings rather than cumulative knowledge, highlighting the need for harmonised datasets and comparative frameworks capable of distinguishing context effects from structural determinants. While our scoping review prioritised a deep, paper-by-paper qualitative analysis to capture nuanced behavioural determinants, we acknowledge that automated bibliometric tools could further aggregate trends in authorship and institutional networks. Future research could combine these automated mapping techniques with non-open-access data to enhance cross-country comparisons and build more cumulative, harmonised frameworks for transport policy.

Beyond technical limitations, there are persistent conceptual blind spots in how mobility, accessibility, and equity are theorised in the LATAM literature, many of which reflect broader gaps in the international field but are particularly acute in this regional context. Compared to the wider transport equity literature, which is increasingly integrating affective and experiential dimensions of travel, social identity, and intersectionality as explanatory frameworks, the LATAM corpus frequently uses an infrastructure-centred conception of accessibility. While this literature review highlights the prevalence of TRSE in low-density peripheral areas, there is a lack of empirical evidence addressing the challenges of high-density urban pockets that remain underserved by public transport.

Social and cultural dimensions, such as gender norms, care responsibilities, race, or migration background, are often overlooked or treated as control variables rather than explanatory factors. Informal, care-related, and non-commuting mobility remains understudied, despite its centrality to everyday life and social inclusion. Moreover, few works explicitly link transport to well-being, health, or environmental outcomes, resulting in fragmented understandings of mobility justice. There is also a shortage of research interrogating governance structures, policy implementation, and actor networks, to clarify how institutional contexts shape equity outcomes. These LATAM research tendencies reflect those found in international literature, which have begun to be addressed through, for instance, feminist, care-centred, or equity-related research frameworks that challenge institutional structures.

A further conceptual limitation concerns the assumed separability of the two database corpora. The growing presence of Latin American authors publishing in English-language indexed outlets means that the thematic distinctions between WoS and SciELO documented in this review will change over time and the divide may narrow as publication incentive structures increasingly encourage researchers from the region to target indexed journals. Future research using multilingual scoping should consider whether corpus boundaries remain analytically meaningful as publication practices evolve.

Several studies reveal practical and institutional barriers that limit research depth and policy translation. Financial constraints or discontinuation of accessibility funds hinder sustained data collection and program evaluation. Ethical, privacy, and data-sharing issues further constrain the integration of digital or proprietary datasets. Additionally, resource-intensive participatory and mixed-method approaches are difficult to scale, leading to small qualitative samples that nonetheless yield rich but localised insights. Finally, some studies emphasise policy challenges without providing actionable pathways or evaluation frameworks, suggesting a gap between diagnostic and prescriptive research. Overall, this review reveals a significant gap in integrated, multi-dimensional evaluation frameworks for TRSE, and points toward a future research agenda organised around four interconnected priorities.

The first concerns data infrastructure and representational equity. Future research must address the systematic under-representation of marginalised groups in transport datasets. This requires investment in longitudinal and nationally representative travel surveys that capture informal transport practices and care-related and non-commuting trips. Harmonised, cross-national datasets would further enable comparative analyses. Critically, data collection should prioritise participatory and community-based methods that surface lived experiences.

The second priority concerns methodological development. Cross-sectional and largely quantitative approaches provide snapshots of exclusion but are unable to trace its dynamics, causes, or the effects of interventions over time. Studies should focus on intersectional inequalities through analytical frameworks that treat gender, age, ethnicity, and income as mutually constitutive rather than independent axes of exclusion. Multi-scalar approaches that move between neighbourhood, city, and regional levels could also address spatial distortions introduced by transport analysis zones and aggregate measures.

The third priority concerns theoretical development, particularly the integration of perspectives that remain underdeveloped in the LATAM transport equity literature. These include feminist and care-centred transport research, mobility justice frameworks that explicitly connect transport to well-being, health, and environmental outcomes, and institutional and governance analyses that examine how actor networks and policy implementation processes shape equity outcomes.

The fourth priority concerns the evaluation of policy interventions. Future research should develop and apply equity assessment tools capable of measuring distributional impacts across intersecting social categories, incorporating both objective and subjective mobility experiences. Comparative, multi-city intervention studies can distinguish contextual effects from structural determinants and identify which policy designs work locally.

5. Conclusion

This multilingual scoping review highlights how behavioural factors and modal choice shape TRSE in LATAM cities. Through the development of a four-dimensional conceptual framework that integrates accessibility, availability, affordability, and marginalised spaces and mobility, the review reveals particularities rooted in LATAM that are often overlooked in English-language indexed literature.

The findings reveal that TRSE in LATAM cities is produced through the intersection of multiple, mutually reinforcing dimensions. Income constraints nonetheless constitute a structurally pervasive determinant, as low-income populations are disproportionately burdened by heightened mobility costs, longer commuting times, and substantial displacement to peripheral areas with inadequate and unreliable transport provision. Crucially, recent investments to improve job accessibility and promote modal shift toward public transport and active modes primarily benefit middle-income groups, while low-income populations remain the least likely to change their modal choices, relying primarily on informal transport and motorised modes to cope with accessibility deficits. Policies that are framed as progressive or sustainable can, in practice, reproduce stratified mobility regimes when affordability and behavioural constraints are left unaddressed.

These income-based inequalities are, however, inseparable from intersecting axes of exclusion along lines of gender, age, ethnicity, and migration background, which the reviewed literature (particularly in SciELO) addresses with considerable depth. Gendered security risks constitute a defining feature of exclusion in LATAM contexts, with women's mobility severely constrained by an increased perceived risk of harassment, especially on public transport, domestic and indoor violence, job insecurity, and an unequal burden of care. Personal security also emerges as a critical modal-choice determinant among active travellers, particularly constraining the mobility choices of children, older adults, and women, and consequently limiting their participation in society. Ethnicity and race further intersect with income and spatial marginalisation to shape mobility experiences that aggregate data systematically obscure. For instance, Indigenous peoples, Afro-descendent populations, and migrants face compounding disadvantages in both transport access and representation in the research literature itself. Social stigma and car-dominant cultural norms add a further layer, stigmatising public transport users and residents of informal settlements that cannot be reduced to economic constraint alone. These findings call for analytical frameworks and policy responses that treat intersectionality

not as a corrective secondary measure but as a core principle of transport equity research and planning.

Comparative analysis between databases shows that relying exclusively on indexed, English-language literature would provide a partial and biased view of TRSE in LATAM. While WoS tends to foreground modes and narratives that align with global sustainability agendas, SciELO publications place greater emphasis on specific target groups, particularly women, informal workers, and peripheral residents, and on individual motorised modes and informal arrangements that underpin everyday “survival mobilities.” The combined use of both databases helps surface the intersections between race, income, and urban context and makes visible mobility practices and risks that remain largely invisible in mainstream literature. The conceptual framework developed in this review provides a structured basis for such assessments, integrating behavioural constraints, structural inequalities, and socio-spatial dynamics into a cohesive analytical lens that can support cumulative and comparative research on transport equity and mobility justice in LATAM.

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Author contribution

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