<BOOK-PART>
<LRH>Daniel Oviedo and Luis Guzman</LRH>
<RRH>Transportation Planning and Development in Bogotá</RRH>
<BOOK-PART-META><LBL>**Part III**</LBL> <TITLE>**Connecting the Places**</TITLE></
<SUBTITLE>**Transportation and Infrastructure Challenges and Strategies**</SUBTITLE>BOOK-PART-META>
</BOOK-PART>

<BOOK-PART>
<BOOK-PART-META><LBL>**10**</LBL>
<TITLE>**Transportation Planning and Development in Bogotá**</TITLE>
<SUBTITLE>**Balancing the Urgent and the Strategic**</SUBTITLE></BOOK-PART-META>
<OPENER><CONTRIBS><AU><GNM>Daniel</GNM> <SNM>Oviedo</SNM></AU> and
<AU><GNM>Luis</GNM> <SNM>Guzman</SNM></AU></CONTRIBS></OPENER>
<BODY><HEAD1><TITLE>**Introduction**</TITLE></HEAD1>

Bogotá, the capital city of Colombia, has gained a reputation among planning and urban scholars as a laboratory of infrastructure and planning innovation, as well as an example of consolidating mega-cities in the Global South dealing with acute levels of social, environmental, and spatial inequalities. Planning priorities in Bogotá have historically focused on demographic, economic, and urban development needs with partial consideration of municipalities in its vicinity. Phenomena of physical conurbation, as well as economic and demographic dynamics have formed a complex functional structure that supersedes the city's administrative boundaries, leading to an imbalanced regional development between Bogotá and its surrounding municipalities (Guzman, Oviedo, and Bocarejo, 2016). Bogotá's centralized urban form and strong urban primacy in the region and the country, alongside pressing needs for mobility and sustained economic growth have steered infrastructure, land-use, and transport policies during two decades, which themselves have produced inequalities in connectivity, accessibility to opportunities and exposures to the negative externalities of transport for different social groups.

Bogotá is a frequent reference in local and international urban research from the optics of transport, urban planning, and urban development. A considerable body of research has highlighted the role of large-scale infrastructure and urban transport interventions such as local Bus Rapid Transit (BRT) in the city's mobility and accessibility, urban form and land markets, as well as both its positive and negative social and environmental consequences (Acevedo et al., 2008; Gilbert, 2008; Guzman, Oviedo, and Bocarejo, 2016; Sandoval and Hidalgo, 2004; Skinner, 2004). However, not all the debates about Bogotá have centered on the infrastructure side of its development. As a pioneer in sustainable urban policies that do not depend on infrastructure such as *Car-free Day* and C*iclovía*, Bogotá has become a poster case of best practices in urban mobility, particularly for international development agencies and NGOs promoting sustainable development agendas through technical assistance, capital funding and global philanthropy (Montero, 2017, 2018).

Considering that urban mobility has implications beyond urban development, embodied by goals such as SDG 11 (sustainable cities and communities), a critical overview of recent policies that negotiate the challenges of rapid urban and population growth with structural and strategic

priorities from this perspective becomes a relevant contribution to current urban debates around megacities. This chapter addresses such challenges through three sections. First, we present an overview of the urban functional structure of Bogotá in the context of urban mobility and its potential implications for access, equity and exposure to risks associated to urban transport. Second, we discuss two examples of recent urban mobility policies implemented in the current city administration that address some of these challenges, discussing the relevance of strategic action and long-term vision and priority setting in establishing urban development agendas. Third, we reflect on the implications of past and present development and challenges for the future of the city in a context of the globally best practices, city branding and urban examples as leverages for new urban development models (Bonakdar and Audirac, 2019; Duque Franco and Ortiz, 2020; Montero, 2018; Oviedo and Joshi, 2015; Wood, 2015).

<HEAD1><TITLE>**Understanding Bogotá's Functional Structure from a Perspective of Mobility and Accessibility**</TITLE></HEAD1>

Bogotá and its metropolitan area are an unofficially constituted conurbation, which has led to a multiplicity of definitions of what metropolitan Bogotá means. In 2018, Bogotá has 7.9 million inhabitants, and its administration boundary occupies 380 km^2. The surrounding municipalities cover 2,272 km^2 with a population of 1.45 million inhabitants. The functional structure of the Bogotá region can incorporate up to 17 municipalities with different degrees of integration with the city in a region that has developed with Bogotá at the center with main infrastructure links connecting the various municipalities with different parts of the city (Guzman, Oviedo, and Bocarejo, 2016). Figure 10.1 shows the configuration of the metropolitan area.

<FIG><LBL>Figure 10.1</LBL> <CAPTION>Bogotá and surrounding municipalities</CAPTION></FIG>

At the interurban scale, flows between the different municipalities in the region and Bogotá mix intra-urban and inter-urban relations, with a marked center-periphery tendency. Economic and social processes tend to surpass borders and have impacts in increasingly large geographical areas, leading to a clustering of economic activities and functional integration that can have varying degrees of complementarity (Batten, 1995; Fingleton, 2003; Frost and Spence, 1995; van Oort, Burger, and Raspe, 2010). In this context, different municipalities of the region and areas within Bogotá have emerged as local economic clusters that developed their own activities and began to compete with the central urban nucleus, giving rise to a metropolitan region with some degree of polycentrism. Large-scale industrial activities have progressively migrated to neighboring municipalities in the west and north of the region. However, despite such dynamics and efforts from municipal and subnational levels for providing incentives for the relocation of economic activities, most activities with the highest economic output were consolidated and increased in importance,

mainly within the boundaries of Bogotá. As of today, Bogotá concentrates almost 90% of its employment in the region, with most formal employment, particularly in the services sector, concentrated on the eastern edge of the city, with some exceptions in the south and north (Sanchez-Serra, 2016).

Bogotá shows important inequalities in access to housing throughout the territory. The availability of affordable housing for lower income households is low, which historically has caused this segment of the population to locate in informal settlements in the outskirts of the city or in neighboring municipalities, often in poor conditions of dwellings and limited access to networked infrastructures and services, and with marked dynamics of incremental housing development for renting and/or extended family (Oviedo and Dávila, 2016; Parés-Ramos, Álvarez-Berríos, and Aide, 2013; Watson, 2009; Yunda and Sletto, 2017). Such trends have led to very high population densities in areas where low- and middle-income households predominate, while in high-income areas, densities are lower. The most densely populated areas, which can reach values of up to 70,000 inhabitants/km2, are mostly in socially and economically deprived areas, usually on the southern and western edges of the city. On the other hand, more central and northeastern sectors of the city are characterized by higher built areas with lower population densities, where there is a wide range of offices, services, and urban equipment, in addition to the largest concentration of formal employment in the city. These areas can have densities between 6,000 and 15,000 inhabitants/km2.

The high concentration of employment in the expanded city center includes several planning zones, which concentrate nearly one-third of the city's job supply while occupying only 10% of the city's urbanized land. By contrast, the main center of employment concentration in Mexico City, with only 5% of formal employment and less than 2% of total employment (Suárez, Murata, and Delgado Campos, 2016). Cross-referencing the above with the income distribution of the population, the evidence suggests that lower income households are located farther away from employment centers, at an average distance of 12 km, which causes high travel times. These results show that there is a large concentration of low-income households located more than 10 km or 65 min/trip from the expanded city center. This has direct consequences on accessibility to work.

Bogotá's concentration of economic activities in the expanded center of the city is well-documented in the literature and it has both positive and negative consequences (Del Busto Pinzón and de Souza, 2016; Guzman, Oviedo, and Bocarejo, 2016; Skinner, 2004). On the one hand, agglomeration economies brings consumers closer to markets, and closes spatial gaps between supply and demand, inducing economic efficiencies, particularly in sectors such as industry, retail and services (Kanemoto, 2013). In Bogotá, the services economy in the formal sector has consolidated alongside a clearly defined high-value area that has attracted a large share of financial,

logistics, and professional services, pulling in already large investment in real estate development, infrastructure, and public space, and increasing land prices in and around the area (Parés-Ramos, Álvarez-Berríos, and Aide, 2013). Such configuration can favor more sustainable mobility through short and radial trips in alternative modes, given the appropriate conditions of the built environment.

<FIG><LBL>Figure 10.2</LBL> <CAPTION>Travel production and attraction for income-generating purposes</CAPTION></FIG>

With an increasing middle class and rising social mobility, Bogotá's population is undergoing a rapid transition towards more complex mobility and land-use configuration powered by rising income and increased investment in commercial, retail and public space developments throughout the city (Araque Solano and Silva, 2018; Uribe Mallarino and Ramirez Moreno, 2019). Figure 10.2 shows descriptively the integration of economic networks in the region reflected by work trips. The points indicate the intensity of the internal relations of each zone (intrazonal trips work motive) and the lines represent the amount of work motive trips between different zones. As shown, there is a great intensity in travel-work relationships within Bogotá. With the exception of industrially active municipalities such as Facatativá, Zipaquirá and Chía, the relations between municipalities and their interdependence with Bogotá, are of a lesser magnitude. In absolute terms, the city center and south-west areas function as the most important centers of the urban network (greater number of internal trips, 10% of total work trips). Not only do these areas have a high number of internal trips for work purposes, but they also involved many flows within the city.

As shown in Figure 10.2, there is a large dependency from the city center and economically active areas in the western side of Bogotá, as well as industrial municipalities for work-related travel. As accessibility depends not only on the spatial distribution of opportunities and the configuration of the transport network but also on the individual characteristics of the population, the areas of the main destinations of work trips vary according to the socioeconomic condition of the area of origin of these trips. The availability of skill-appropriate employment and the spatial distribution of both the formal and informal job supply in Bogotá leads to very specific destination areas according to income range, which are shown in Figure 10.3. These results have been classified into three groups: main destinations of low-income households, middle-income households and higher-income households. The results confirm first that there is a large concentration of jobs on the eastern edge of the city and second, that work destinations have a specific concentration according to the average level of income of the worker. The eastern edge of the city attracts about 30% of work trips. Additionally, there are several differences between the income groups: although a large proportion of the work destinations of low-income households are concentrated in the expanded center (about 28%), the remaining two thirds of these trips are dispersed practically throughout the

city, making Soacha an important attractor of this type of travel for people with lower income. By contrast, the travel patterns of the higher-income households show the expanded center as the predominant destination.

<FIG><LBL>Figure 10.3</LBL> <CAPTION>Travel production and attraction for income-generating purposes</CAPTION></FIG>

A similar analysis for non-compulsory mobility (trips with a different motive to work and study), different travel patterns are observed, where the expanded center loses a bit of prominence, although it remains important. In this case, main destinations of non-compulsory mobility of lower income households are mainly located in the same low-income areas (Soacha, Bosa, Ciudad Bolivar, Kennedy and part of Suba). Non-compulsory travel in Bogotá also shows a larger dependency of non-motorized modes in the lower-income segment of the population, leading to more local (and sustainable) travel patterns for leisure, recreation and shopping needs. As for middle-income households, there is a wider distribution of destinations, which covers the entire city, apart from the southern part. Finally, higher income households tend to concentrate their main destinations also near their places of residence. The main destinations in this category coincide with the highest income areas of the city.

The functional configuration of Bogotá has determined the main infrastructure developments for urban mobility in the city. The Transmilenio BRT network was incrementally developed from the areas of higher concentration of middle-income population to the expanded city center and then expanded from there to the south and west of the city in later phases. While such a planning approach responded to the technical criteria of travel demand and a visible crisis of urban mobility embodied by large levels of congestions, long travel times and high levels of externalities, consolidated an urban development trajectory marked by spatial segregation and concentration of both opportunities, flows and travel demand with its associated externalities (Ardila, 2007; Carrigan, King, Velasquez, Raifman, and Duduta, 2013; Hidalgo, Pereira, Estupiñán, and Jiménez, 2013; Montezuma, 2005; Sandoval and Hidalgo, 2004). Moreover, Bogotá's approach to public transport policies since the late 1990s has for the most part influenced the city's land prices, motorization rates, accessibility, and social inclusion, widening already large gaps between social groups, often unintendedly (Carrigan, King, Velasquez, Raifman, and Duduta, 2013; Combs, 2017; Combs and Rodríguez, 2014; Perdomo, 2011).

Such effects are partially reflected by the distribution of travel demands by mode of transport. In the low-income segment, travel by public transport and Transmilenio (TM) takes between 5% and 33% more, compared to high-income households. In addition, in low-income areas there is one car for every five households (0.19 vehicles/household), while in middle-income areas there is 1.5 cars every two households (0.72 vehicles/household) and in high-income areas there are

1.6 cars per household (1.59 vehicles/household). These differences are reflected in the average modal distribution, since in high-income areas more than half of motorized trips for work or study (53%) are made by private vehicle, while in lower-income areas, car use barely reaches 15% (Guzman, Oviedo, and Rivera, 2017).

Although the introduction of the TM system revolutionized public transport in the city, as it has well been documented in the international literature during a good part of the last two decades, travel times remain very high for low-income households located in the urban periphery. The current structure of the public transport system in Bogotá in combination can have regressive consequences for low-income people in the city (Combs, 2017; Guzman, Oviedo, and Cardona, 2018). Not only is this socioeconomic group forced to spend more on transport (proportional to their income), to suffer discomforts and to have less time available for other activities due to the lack of suitable alternatives for their trips.

<FIG><LBL>Figure 10.4</LBL> <CAPTION>Per capita accessibility by public transport</CAPTION></FIG>

These figures show a persistent problem of inequality in mobility in Bogotá, which recent administrations in the city have struggled to address. There is a difficult balance between short-term priorities and the long-term vision of development for the city, which for the most part it has not been able to set. This marks a struggle for addressing structural yet operational issues such as public transport integration, fleet modernization, signalization and parking, while long-term planning has been largely unattended. The ruling mobility masterplan dates from 2005 (Secretaría Distrital de Movilidad, 2005), with only recent attempts at updating it by the current city government (Secretaría Distrital de Movilidad, 2018).

<HEAD1><TITLE>**Prevention and Integration: Strategic Urban Mobility Policies for Long-term Development**</TITLE></HEAD1>

It is in the conditions outlined in the previous section that Bogotá has recently implemented new strategies aiming at addressing long and short-term concerns. Such policies have sought to narrow the gap between urgent priorities and setting a sustainable development trajectory by addressing a longstanding deficit in socially and geographically segregated areas, and by tackling a cross-cutting issue that enabled the development of an integrated strategy of urban management around urban mobility from a public health perspective. These strategies are the development of Transmicable and Vision Zero.

<HEAD2><TITLE>***Transmicable: Addressing Historical Debts on the Backbone of Transport Infrastructure***</TITLE></HEAD2>

Aerial cable cars, much like BRTs at the beginning of the first decade of the 2000s have recently become a best-practice for urban integration of urban communities challenged by steep topographies

and a systemic lack of good-quality mobility services, following the successful experience of Medellín (Dávila, 2013; Heinrichs and Bernet, 2014; Levy and Dávila, 2017). In its different forms, these systems have served as the backbone for more structural urban renewal and social integration processes of neighborhoods often enduring poor access to infrastructure and quality of the built environment, as well as acute social tensions such as crime, poverty and unemployment. While the transport systems by themselves may not address social and environmental issues in their entirety, they can become a powerful instrument to structure multi-sectoral strategies for urban integration (Brand and Dávila, 2011; Heinrichs and Bernet, 2014; Parés-Ramos, Álvarez-Berríos, and Aide, 2013).

While not the first attempt at building a cable-car line in the Bogotá metropolitan area, after a failed effort at developing a line connecting with Transmilenio in the Municipality of Soacha (Álvarez Rivadulla and Bocarejo, 2014), the *Transmicable* project has become the first aerial cable-car system that complements public transport supply in the city of Bogotá. The project seeks to build on the international experience with similar developments over the years, looking closely at the experiences of Medellín with explicit support from staff at the Medellín Metro company during some of the planning and implementation phases of the project and with technical advice from the International Finance Corporation (IFC) of the World Bank and Swiss Economic Cooperation (SECO). The *Transmicable* started operating in 2018 in Ciudad Bolívar, an area of the south-east hills of the city, characterized by its concentration of low-income populations and informal housing development. The aerial cable-car line has four stations with a total length of 3.34 km, which represent an approximate travel time of 13.5 minutes inside ten-passenger cabins that allow to mobilize up to 3600 passengers per hour in each direction.

The area in which the project is located is characterized by a steep topography and difficult physical access, with communities of low and very low income. About 98% of households in the direct area of influence of the project live on less than two monthly minimum wages. The project aims at benefiting directly 40 neighborhoods in Ciudad Bolivar, which were previously spending up to 79 minutes on average traveling to central Bogotá and up to three transfers for reaching the city center. The population, same as in many other peripheral settlements in the metropolitan area, shows a large dependency of public (37%) and non-motorized transport (58%) and can spend up to 27% of their individual income commuting. Earlier research suggests that low-income peripheral settlements in the Bogotá metropolitan area are often subject to intersecting conditions of social and transport disadvantages that adversely affect conditions for accessibility and social inclusion that are compounded by their comparative geographical and physical disadvantage for mobility (Oviedo Hernandez and Titheridge, 2016). Transport plays an essential role in these conditions of disadvantage as a lack of means for efficient, affordable, and inclusive mobility can derive in

cumulative marginalization and transference of the burden of travel to the most vulnerable members in the household (e.g. women not at work, children and the elderly) (Guzman and Oviedo, 2018; Lucas, Mattioli, Verlinghieri, and Guzman, 2016; Oviedo Hernandez and Titheridge, 2016).

It is under these principles that the project was conceived nearly ten years and four Mayors ago, in the midst of debates about addressing the mobility needs of low-income neighborhoods in the southern hills of the city. *Transmicable* started operating on December 29, 2018, with the aim of improving the quality of life of the citizens of the area of influence by reducing their travel time and increasing accessibility in the area (Transmilenio, 2018). *Transmicable* represents a rare example in recent urban transport policies of transport and land-use integration and the response to accessibility needs through its different components (Van Wee, Geurs, and Chorus, 2013). In addition to the integration with the Transmilenio BRT network and the recently implemented Integrated Public Transport System (SITP) (Guzman, Oviedo, and Cardona, 2018), the project contemplates development of urban amenities and public spaces such as green spaces, social areas, and public equipment for the development of cultural, social, and recreational activities.

Despite all its positive features, it must be noted that *Transmicable* was for the most part planned as a top-down project supported by international development funding and led by the technical experts at Metro of Medellin and international cooperation consultants, as well as in-house staff from the Mobility Secretariat in Bogotá (Transmilenio, 2018). In its latter phases the project adopted a more participatory approach, seeking to integrate the local communities and empower residents to develop a sense of ownership of the project and the associated urban renewal interventions. Through an intersectoral effort for participatory planning, consultation and monitoring, the city's government is involving the community in the implementation of infrastructure and amenities around the cable-car and connecting *Transmicable* with other social, cultural and economic development agendas at a local level (e.g. a community-led initiative with 876 local representatives to provide additional grass-roots support for a transport system operated by TransMilenio) (Emblin, 2018; Transmilenio, 2018). If *Transmicable* can tap on the historically strong community-based and non-governmental organizations working in Ciudad Bolivar as well as existing community networks, the project can become truly transformative from more than a mobility perspective.

<HEAD2><TITLE>***Vision Zero: A Structural Approach to Road Safety***</TITLE></HEAD2>

In 2016, Bogotá became the first city in Latin America to adopt *Vision Zero* (Kim, Muennig, and Rosen, 2017), a strategy pioneered in Sweden, as its director policy for road safety. The principle behind the policy is simple: no death in the road is acceptable, therefore we must strive to eliminate all fatalities associated with traffic from our cities. In a context of increasing international interest in the adoption of *Vision Zero*, the adoption of such a policy in a global south city such as Bogotá, as a

central part of the urban mobility agenda despite complex urban development and structural transport issues as described in the previous section becomes an interesting case for discussion. It is relevant to highlight that despite constant debate around the strategies and requirements for implementation of such an ambition policy, academic debates surrounding *Vision Zero* have still not reached a consensus regarding frameworks, actions and requirements for its successful implementation, calling attention to institutional, governance, cultural and behavioral factors as possible obstacles for success (Ahangari, Atkinson-Palombo, and Garrick, 2017; Belin, Tillgren, and Vedung, 2012; Evenson, LaJeunesse, and Heiny, 2018; Naumann et al., 2019).

Bogotá's recent history with road safety was marked by rapid progress followed by a stalling in the reduction of traffic fatalities. Between 1996 and 2006 there was a remarkable decrease in traffic fatality rates of more than 60% as a result of education, enforcement, and infrastructure programs, which largely benefitted private vehicle users. Some of this initial success can be partially attributed to Transmilenio, which despite some localized negative effects with regards to road safety in its first years, contributed to the reduction of traffic fatalities along its main corridors after implementation (Bocarejo, Velasquez, Díaz, and Tafur, 2012). However, despite rapid progress in the reduction of traffic mortality, Bogotá soon had to grapple with the stark reality of a steady number of fatalities in the streets every year (Vergel-Tovar, Hidalgo, and Sharpin, 2018). By 2017, 537 people died in traffic accidents, out of which 50% were pedestrians (Secretaría Distrital de Movilidad, 2017). In 2018, the reduction of fatalities compared to 2008 was 1.7%.

The stalling number of traffic fatalities led the city's government to re-evaluate its road safety policies, embodied in the District Road Safety Plan (PDSV) 2011–2021. The plan was a timid policy without concrete actions in terms of protection to vulnerable users and secure infrastructure, focusing only on training and dissemination campaigns for road safety. One of the most worrying aspects regarding this program was that monitoring was based on normalization by the number of vehicles and not population, allowing possible biases due to increases in motorization. Building on local research and with support of global philanthropy (Montero, 2018), including the World Resources Institute and the Bloomberg Initiative for Global Road Safety, in 2016 the Mayor adopted *Vision Zero* as a commitment to protecting peoples lives on the road, and derogated the PDSV 2011–2021 in 2017 in order to adopt a new PDSV 2017–2026 with Vision Zero as the structuring axis. This positioned Bogotá as a pioneer in the region in relation to road safety policy and discourse, which helped the city connect with other global and regional networks and governments pursuing similar agendas and aligning other urban mobility programs under a common objective.

Vision Zero in Bogotá has been adopted as a cross-cutting issue with a shared responsibility of citizens and the state. Since its adoption, the policy has achieved overall reductions in road

deaths via speed management programs involving the redefinition of street limits and the reconfiguration of road space to protect vulnerable users and drivers alike. The policy allows us to address in practice areas of urban mobility that were previously more challenging, such as pedestrianization, on-street parking, traffic signalling, and reduction of road space, which has enabled the city to reclaim streets for the pedestrians and cyclists applying principles of urban design for sustainable mobility (Kemperman and Timmerman, 2009; Mullen, Tight, Whiteing, and Jopson, 2014; Tuckel and Milczarski, 2015; Vergel-Tovar, Hidalgo, and Sharpin, 2018). Such a strategy has been supported by an integral education, communications, and enforcement strategy, with a large share of the sector's budget for communications and education focused on *Vision Zero* (Secretaría Distrital de Movilidad, 2018).

Despite not being identified as one of the main challenges faced by a city such as Bogotá from international research, what *Vision Zero* suggests is that by defining a structural problem to address such a thing as traffic deaths it is possible to articulate seemingly disconnected plans and actions and gear them towards a longer-term goal. Moreover, the strategy has enabled the local government to navigate the often-complicated politics around contentious users such as the drivers of private vehicles, which have historically been politically protected from potentially upsetting public actions. Whilst Bogotá is still struggling to reduce the number of fatalities on its road, this plan seems to have opened a way for clear and concise actions in terms of victim protection, traffic pacification and speed management, which are having a much wider impact on the configuration of the city and its inhabitants than what safety pertains.

<HEAD1><TITLE>**Conclusion**</TITLE></HEAD1>

Bogotá's history of urban development and transport policy continues to be an interesting case for analysis and reference in the planning of large-scale urban settings. Despite a historical pattern of development geared towards spatial and social inequalities and a potential lackluster because of the observed effects of its earlier acclaimed best-practice solutions such as BRT, the city continues to provide spaces for reflection and material for research and debate around urban planning and development. Bogotá, just like many other megacities in the Global South, seems to be caught in the struggle between the urgent and the important, while its successful experiences continue circulating the globe in search for replication and adaptation to new realities (Montero, 2017, 2018; Acevedo, J., Bocarejo, J., Lleras, G., Echeverry, J., Ospina, G., & Rodriguez, A. (2008). *El transporte como soporte al desarrollo de Colombia. Una visión al 2040.*. 10.16924/riua.v0i29.257.

In this regard, it is worthwhile exploring what Bogotá has been up to in more recent years, both in relation to infrastructure and other not-so-visible urban policies such as *Vision Zero*. Moreover, it is necessary to recognize the governance, political, financial and social considerations and implications of such initiatives, which escape the scope of this chapter. Nonetheless, it is relevant

to place the insights in this research in the context of current debates and tendencies from internationally recognized organizations operating at the global, supranational, national and urban levels seeking to promote best-practices, while negotiating with ever-growing community-based organizations and non-government organizations actively working on urban mobility issues.

While this chapter is not an attempt to be part of an evaluative assessment of either the *Transmicable* or *Vision Zero*, the analysis from a rigorous academic perspective in light of current development debates is a pertinent contribution to the transport and urban planning literature. Further research is needed to explore in detail the two cases highlighted throughout this manuscript in order to raise more evidence and data that can benefit both Bogotá and cities seeking to follow in its footsteps. More academic debates are necessary for a systematic analysis of the implications of urban policies and planning in cities like Bogotá from different perspectives and actors and within different sectoral agendas, such as urban mobility.</BODY>

<BACK>

<REF-LIST><TITLE>**References**</TITLE>

Acevedo, J., Bocarejo, J., Lleras, G., Echeverry, J., Ospina, G., & Rodriguez, A. (2008). *El transporte como soporte al desarrollo de Colombia. Una visión al 2040*. doi:10.16924/riua.v0i29.257.

Ahangari, H., Atkinson-Palombo, C., & Garrick, N. W. (2017). Automobile-dependency as a barrier to vision zero, evidence from the states in the USA. *Accident Analysis and Prevention*, 107, 77–85. doi:10.1016/j.aap.2017.07.012.

Álvarez Rivadulla, M. J., & Bocarejo, D. (2014). Beautifying the slum: Cable car fetishism in Cazucá, Colombia. *International Journal of Urban and Regional Research*, 38(6), 2025–2041. doi:10.1111/1468-2427.12201.

Araque Solano, A. S., & Silva, Y. P. (2018). The dynamics of building in Bogotá 1995–2013. *Revista de Economia Institucional*, 20(39), 257–279. doi:10.18601/01245996.v20n39.11.

Ardila, A. (2007). How public transportation's past is haunting its future in Bogotá, Colombia. *Transportation Research Record*, (2038), 9–15. doi:10.3141/2038-02.

Batten, D. F. (1995). Network cities: Creative urban agglomerations for the 21st century. *Urban Studies*, 32(2), 313–327. doi:10.1080/00420989550013103.

Belin, M. Å., Tillgren, P., & Vedung, E. (2012). Vision zero – A road safety policy innovation. *International Journal of Injury Control and Safety Promotion*, 19(2), 171–179. doi:10.1080/17457300.2011.635213.

Bocarejo, J. P., Velasquez, J. M., Díaz, C. A., & Tafur, L. E. (2012). Impact of bus rapid transit systems on road safety: Lessons from Bogotá, Colombia. *Transportation Research Record*, 2317, 1–7. doi:10.3141/2317-01.

Bonakdar, A., & Audirac, I. (2019). City branding and the link to urban planning: Theories, practices, and challenges. *Journal of Planning Literature*. doi:10.1177/0885412219878879.

Brand, P., & Dávila, J. (2011). Mobility innovation at the urban margins: Medellín's Metrocables. *City*. Retrieved from www.tandfonline.com/doi/abs/10.1080/13604813.2011.609007

Carrigan, A., King, R., Velasquez, J. M., Raifman, M., & Duduta, N. (2013). Social, environmental, and economic impacts of bus rapid transit: Case studies from around the world. *Embarq*, 151.

Combs, T. S. (2017). Examining changes in travel patterns among lower wealth households after brt investment in Bogotá, Colombia. *Journal of Transport Geography*, 60, 11–20. doi:10.1016/j.jtrangeo.2017.02.004.

Combs, T. S., & Rodríguez, D.A. (2014). Joint impacts of bus rapid transit and urban form on vehicle ownership: New evidence from a quasi-longitudinal analysis in Bogotá, Colombia. *Transportation Research Part A: Policy and Practice*, 69, 272–285. doi:10.1016/j.tra.2014.08.025.

Dávila, J. (2013). *Urban mobility and poverty: Lessons from Medellin and Soacha, Colombia* (J. Dávila, Ed.). Retrieved from http://discovery.ucl.ac.uk/1366633/

Del Busto Pinzón, D. F., & de Souza, F. T. (2016). A data based model as a metropolitan management tool: The Bogotá-Sabana region case study in Colombia. *Land Use Policy*, 54, 253–263. doi:10.1016/j.landusepol.2016.02.019.

Duque Franco, I., & Ortiz, C. (2020). Medellín in the headlines: The role of the media in the dissemination of urban models. *Cities*, 96, 102431. doi:10.1016/j.cities.2019.102431.

Emblin, R. (2018). Bogotá gets high-flying public transportation with TransMiCable | The City Paper Bogotá. Retrieved October 16, 2019, from *The City Paper* website: https://thecitypaperbogota.com/bogota/bogota-gets-high-flying-public-transportation-with-transmicable/20652

Evenson, K. R., LaJeunesse, S., & Heiny, S. (2018). Awareness of vision zero among United States' road safety professionals. *Injury Epidemiology*, 5, 1. doi:10.1186/s40621-018-0151-1.

Fingleton, B. (2003). Externalities, economic geography, and spatial econometrics: Conceptual and modeling developments. *International Regional Science Review*, 26(2), 197–207. doi:10.1177/0160017602250976.

Frost, M. E., & Spence, N. A. (1995). The rediscovery of accessibility and economic potential: The critical issue of self-potential. *Environment & Planning A*, 27(11), 1833–1848. doi:10.1068/a271833.

Gilbert, A. (2008). Bus rapid transit: Is transmilenio a miracle cure? *Transport Reviews*, 28(4), 439–467. doi:10.1080/01441640701785733.

Guzman, L. A., & Oviedo, D. (2018). Accessibility, affordability and equity: Assessing 'pro-poor' public transport subsidies in Bogotá. *Transport Policy*, 68, 37–51. doi:10.1016/j.tranpol.2018.04.012.

Guzman, L. A., Oviedo, D., & Bocarejo, J. P. J. P. (2016). City profile: The Bogotá metropolitan area that never was. *Cities*, 60, *Part A*, 202–215. 10.1016/j.cities.2016.09.004

Guzman, L. A., Oviedo, D., & Cardona, R. (2018). Accessibility changes: Analysis of the integrated public transport system of Bogotá. *Sustainability (Switzerland)*, 10, 11. doi:10.3390/su10113958.

Guzman, L. A., Oviedo, D., & Rivera, C. (2017). Assessing equity in transport accessibility to work and study: The Bogotá region. *Journal of Transport Geography*, 58, 236–246. doi:10.1016/j.jtrangeo.2016.12.016.

Heinrichs, D., & Bernet, J. S. (2014). Public transport and accessibility in informal settlements: Aerial cable cars in Medellín, Colombia. *Transportation Research Procedia*. doi:10.1016/j.trpro.2014.11.005.

Hidalgo, D., Pereira, L., Estupiñán, N., & Jiménez, P. L. (2013). TransMilenio BRT system in Bogota, high performance and positive impact – Main results of an ex-post evaluation. *Research in Transportation Economics*, 39(1), 133–138. doi:10.1016/j.retrec.2012.06.005.

Kanemoto, Y. (2013). Evaluating benefits of transportation in models of new economic geography. *Economics of Transportation*, 2(2), 53–62. doi:10.1016/j.ecotra.2012.11.003.

Kemperman, A., & Timmerman, H. (2009). Influences of built environment on walking and cycling by latent segments of aging population. *Transportation Research Record: Journal of the Transportation Research Board*, (2134), 1–9.

Kim, E., Muennig, P., & Rosen, Z. (2017, December 1). Vision zero: A toolkit for road safety in the modern era. *Injury Epidemiology*, 4. doi:10.1186/s40621-016-0098-z.

Levy, C., & Dávila, J. D. (2017). Planning for mobility and socio-environmental justice: The case of Medellín, Colombia. *Environmental Justice and Urban Resilience in the Global South*, 37–56. doi:10.1057/978-1-137-47354-7_3.

Lucas, K., Mattioli, G., Verlinghieri, E., & Guzman, A. (2016). Transport poverty and its adverse social consequences. *Proceedings of the Institution of Civil Engineers: Transport*, 169(6), 353–365. doi:10.1680/jtran.15.00073

Lucas, K., Tyler, S., & Christodoulou, G. (2009). Assessing the 'value' of new transport initiatives in deprived neighbourhoods in the UK. *Transport Policy*, 16(3), 115–122. doi:10.1016/j.tranpol.2009.02.004.

Montero, S. (2017, March 1). Worlding Bogotá's Ciclovía. *Latin American Perspectives*, 44, 111–131. doi:10.1177/0094582X16668310.

Montero, S. (2018). Leveraging Bogotá: Sustainable development, global philanthropy and the rise of urban solutionism. *Urban Studies*. doi:10.1177/0042098018798555.
Montezuma, R. (2005). The transformation of Bogota, Colombia, 1995–2000: Investing in citizenship and urban mobility. *Global Urban Development*, 1(1).
Mullen, C., Tight, M., Whiteing, A., & Jopson, A. (2014). Knowing their place on the roads: What would equality mean for walking and cycling? *Transportation Research Part A: Policy and Practice*, 61, 238–248. doi:10.1016/j.tra.2014.01.009.
Naumann, R. B., Heiny, S., Evenson, K. R., LaJeunesse, S., Cooper, J. F., Doggett, S., & Marshall, S. W. (2019). Organizational networks in road safety: Case studies of U.S. Vision Zero cities. *Traffic Injury Prevention*. doi:10.1080/15389588.2019.1587752
Oviedo, D., & Dávila, J. D. (2016). Transport, urban development and the peripheral poor in Colombia. *Journal of Transport Geography*, 51, 180–192.
Oviedo, D., & Joshi, R. (2015). Transport governance of the "international best practice": Parallels between BRT developments in Ahmedabad and Bogotá. *CODATU 2015, Energy, Climate and Air Quality Challenges: The Role of Urban Transport Policies in Developing Countries*. Retrieved from www.codatu.org/wp-content/uploads/CODATU-2015-Proceedings-1.pdf
Oviedo Hernandez, D., & Titheridge, H. (2016). Mobilities of the periphery: Informality, access and social exclusion in the urban Fringe in Colombia. *Journal of Transport Geography*, 55, 152–164. doi:10.1016/j.jtrangeo.2015.12.004.
Parés-Ramos, I. K., Álvarez-Berríos, N. L., & Aide, T. M. (2013). Mapping urbanization dynamics in major cities of Colombia, Ecuador, Perú, and Bolivia using night-time satellite imagery. *Land*, 2(1), 37–59. doi:10.3390/land2010037.
Perdomo, J. A. (2011). A methodological proposal to estimate changes of residential property value: Case study developed in Bogotá. *Applied Economics Letters*, 18(16), 1577–1581. doi:10.1080/13504851.2011.554360.
Sanchez-Serra, D. (2016). *Functional urban areas in Colombia*.
Sandoval, E. E., & Hidalgo, D. (2004). TransMilenio: A high capacity – Low cost bus rapid transit system developed for Bogotá, Colombia. *Urban Public Transportation System*, 37–49. doi:10.1061/40717(148)4.
Secretaría Distrital de Movilidad. (2005). *Plan Maestro de Movilidad*. Bogotá, Colombia.
Secretaría Distrital de Movilidad. (2017). Anuario de Siniestralidad vial de Bogotá. Retrieved from www.simur.gov.co.
Secretaría Distrital de Movilidad. (2018). Informe de Gestión | Secretaría Distrital de Movilidad. Retrieved October 16, 2019, from www.movilidadbogota.gov.co/web/informes_de_gestion
Skinner, R. (2004). City Profile Bogotá. *Cities*, 21(1), 73–81. doi:10.1016/j.cities.2003.10.003.

Suárez, M., Murata, M., & Delgado Campos, J. (2016). Why do the poor travel less? Urban structure, commuting and economic informality in Mexico City. *Urban Studies*, 53(12), 2548–2566. doi:10.1177/0042098015596925.

Transmilenio. (2018). TransMiCable. Retrieved October 16, 2019, from www.transmilenio.gov.co/TransMiCable/

Tuckel, P., & Milczarski, W. (2015). Walk Score™, perceived neighborhood walkability, and walking in the US. *American Journal of Health Behavior*, 39(2), 241–255. doi:10.5993/AJHB.39.2.11.

UNDP. (2016). Sustainable Development Goals (SDGs) | UNDP. Retrieved August 20, 2016, from www.undp.org/content/undp/en/home/sdgoverview/post-2015-development-agenda.html

Uribe Mallarino, C., & Ramirez Moreno, J. (2019). Clase media y movilidad social en Colombia. *Revista Colombiana de Sociología*, 42(2), 229–255. doi:10.15446/rcs.v42n2.50749.

van Oort, F., Burger, M., & Raspe, O. (2010). On the economic foundation of the urban network paradigm: Spatial integration, functional integration and economic complementarities within the Dutch randstad. *Urban Studies*, 47(4), 725–748. doi:10.1177/0042098009352362.

Van Wee, B., Geurs, K., & Chorus, C. (2013). *Information, communication, travel behavior and accessibility*.

Vergel-Tovar, E., Hidalgo, D., & Sharpin, A.B. (2018). Paving the pathways to change: The politics of road safety in Bogota. In *Overseas Development Institute ODI*. Retrieved from www.odi.org/sites/odi.org.uk/files/resource-documents/12115.pdf

Watson, V. (2009). "The planned city sweeps the poor away … ": Urban planning and 21st century urbanisation. *Progress in Planning*, 72(3), 151–193. doi:10.1016/j.progress.2009.06.002.

Wood, A. (2015). The politics of policy circulation: Unpacking the relationship between South African and South American cities in the adoption of bus rapid transit. *Antipode*. doi:10.1111/anti.12135.

Yunda, J. G., & Sletto, B. (2017). Property rights, urban land markets and the contradictions of redevelopment in centrally located informal settlements in Bogotá, Colombia, and Buenos Aires, Argentina. *Planning Perspectives*, 32(4), 601–621. dio:10.1080/02665433.2017.1314792.</REF-LIST>

</BACK>

</BOOK-PART>