

**Transportation**

# Medellín's Low-Carbon *Metrocables*

## Lifting Informal *barrios* Out of Poverty

by **Julio D. Davila** | Nov 24, 2021

“The cable-car is not a toy, and no one will take it away from us,” the young woman asserted. Her words confirmed to me how central Medellín’s first *Metrocable* had become to the life of one of the city’s poorest and most troubled *comunas*. The community leader in her twenties had reacted angrily upon hearing a panel member’s suggestion that cable cars were “pretty toys” that failed to solve residents’ severe transport problems. This was in December 2011, and my research colleagues and I were at the end of an 18-month United Kingdom government-funded **research project** on the urban, transport and social impact of the first two aerial cable-car lines, *Líneas K* and *J*. The cable-car lines had been launched a few years earlier on the steep hills of informal *barrios* scarred by the poverty and violence that had made Medellín internationally notorious, partly the outcome of a bloody drug war waged against the authorities by Pablo Escobar, the city’s most notorious son, and his murderous allies.

These lines were a bid by city authorities to provide a fast and efficient connection to the overground mass-transit system. The two-and-a-half-day international event in Medellín where these words were uttered in dismay comprised speakers from over half a dozen countries, including the research team that I led, debates with former and current Medellín officials, reactions from local non-governmental organizations, community leaders, local and international scholars and consultants, as well as the presence of several *comuna* 1 and 2 residents whose heart-felt testimonies enriched the rather measured views of technical “experts.”



A view of Cali's MIO Cable in comuna 20. Photo: Julio D. Dávila (April 2019)

The two *Metrocable* lines are now widely regarded as the inspiration for a tide of similar schemes in at least eight Latin American countries, and beyond. While most cities with difficult topographies have used them to link previously inaccessible informal neighborhoods, La Paz, in Bolivia, has placed its ten aerial cable-car lines at the core of an urban transit system, with flying pods silently covering longer distances faster and more efficiently than polluting buses ever could. Most other cities have, with varying degrees of success, sought inspiration from Medellín in placing these lines at the core of major urban upgrading efforts, injecting funds and hope for a better future in downtrodden low-income *barrios* and *favelas* that had all but lost it. Medellín now boasts five aerial cable-car lines in peripheral *barrios* that started life as unplanned settlements. All are integrated with the mass transit system through a variety of public transport modes such as the overground, the BRT and its feeder routes, and a tramway. For an additional fee, a sixth line connects *Línea K's* terminal station in Santo Domingo Savio with the Parque Arví nature reserve, some 3,000 feet above the Medellín River valley.

Why did Medellín's authorities draw on an old technology used mainly in ski resorts in rich countries and, occasionally, to convey tourists up hills with pretty views in cities around the world? Has it made a difference to low-income residents of *barrios* born as land invasions by migrants desperate to settle in a prosperous city that grew fast in the 1950s and 1960s but failed to provide many of them with decent jobs and housing? Do aerial cable-cars hold any promise as a sustainable mode of transport in cities with similar topography and social profile as Medellín's, a city marked by some of the highest inter-personal income disparities in Colombia and Latin America?

### Medellín's *Metrocables* and social urbanism: a brief history

Colombia has had a long love affair with cable-cars. In his 1997 book *Colgados de las nubes: Historia de los cables aéreos en Colombia*, economist and historian Gustavo Pérez Angel traces them to the earliest decades of the 20th century when British technology and inputs were used to build a *Cable aéreo* to connect Manizales, at the heart of a prosperous coffee growing region perched high above the Andes mountain range, with Mariquita, a colonial-era town near the mighty Magdalena River thus considerably expanding coffee exports via the Atlantic Ocean.

New roads allowing trucks to transport heavier and larger weights led to the demise of Manizales' *Cable* in the 1960s. But the dream of using this elegant technology to connect the steep hills of Colombia's rapidly growing Andean cities with other regions lingered on for decades. The roots of Medellín's *Línea K* cable-car line, inaugurated in 2004, can be traced to a plan by the city's publicly owned Metro company to increase ridership in its two overground mass-transit rail lines while seeking to redress the city's neglect for the mass of low-income residents in informal settlements that surround the well-planned commercial and middle-class *barrios* along the Medellín River valley. Luis Pérez, Medellín's elected mayor in 2001-2003, told us in an interview for the project that the idea came to him during a visit to a French ski lift resort early on in his administration.



As in Medellín, in Cali (Colombia), MIO Cable users with physical disabilities are better catered for than when using regular bus transport. Photo: Julio D. Dávila (April 2019)

Whatever the genesis of the idea, this unique "star alignment" led to the Medellín municipality's funding of 55 percent of the US\$24 million in design and building costs, with the Metro Company covering the rest. It was a brave decision, a political and institutional jump into the unknown. No other city government had risked public funds on a

cable-car line to connect a dense, chaotically planned, poor and violence-ridden *barrio* with the rest of the city. As no insurance firm would underwrite it, Pérez set aside municipal funds to cover potential claims.

Central government funding would only be forthcoming for cable-car projects starting in 2018, as the 3,000 passengers per hour they convey in each direction are below the official threshold of mass-transit infrastructure projects such as metros and bus rapid transit systems (BRT). Such a project would strain the finances of most Latin American cities. Luckily for Medellín, the well-managed, municipally owned Empresas Públicas de Medellín (EPM) was then generating a yearly surplus for the city of between US\$250 and 300 million, equivalent to 30 percent of EPM's annual revenues. Such enviable source of funds, as well as major shifts in political thinking on investment priorities, helped place Medellín at the forefront of socially minded, progressive urban planning, where formerly neglected barrios benefited from major interventions. Central to these were the *Proyectos Urbanos Integrales* (Integrated Urban Projects-PUIs) launched by mayor Sergio Fajardo (2004-2007) and continued by his successor, Alonso Salazar (2008-2011).

The search for a catchy name for such official actions led to the notion of "social urbanism" that has come to be associated with Medellín in international urban planning circles, a stark contrast to the city's notoriety of the previous decade.

### Do Metrocables work for the poor?



Santo Domingo Savio, Medellín: Línea K, the Biblioteca España and bamboo bridge. Photo: Julio D. Dávila (September 2010)

From the responses we got from residents through focus group discussions, a transport survey, informal conversations, and observations, there is little doubt that *Línea K* was a resounding success. Access to opportunities such as jobs, education, health, social and cultural life are essential for any urban dweller. As the Covid-19 pandemic has made clear especially during enforced lockdowns aimed at containing the spread of the deadly virus, only the very rich or the highly educated can afford not to travel to access such opportunities. The vast majority of Latin America's urban adults travel regularly in occupations that cannot be done remotely, including bank employees, cleaners, domestic workers, taxi or bus drivers, hairdressers, car mechanics, street hawkers, surgeons, dentists. Teachers have found that remote education is not simply a matter of lecturing over the internet, as pupils need individualized and reliable access to a remote device such as a tablet or a laptop, a luxury that few can afford. Those household members

(often males) who are deemed to earn or learn more than others are given priority to draw on limited funds to travel regularly. Lack of access turns the spatial marginality of peripheral *barrios* into social and economic marginality.

Public transport systems will continue to be essential for the equitable and efficient operation of Latin American cities in the foreseeable future. Medellín's experience shows that cable-cars can make a significant contribution to them. And yet, the presence of an aerial cable-car does not ensure that it will provide the service people need, as the controversial closure in 2016 of the *Complexo do Alemão favela* cable-car in Rio de Janeiro after a mere five years of operation has shown. Apart from financial problems, residents saw it as a vanity political project serving foreign "slum tourists" more than locals.

Careful planning and consultations with residents to gauge potential transport demand will help. Also crucial for the long-term sustainability of the project are robust but attractive design features, ancillary services attached to the new infrastructure such as cultural and community spaces, jobs for locals during construction and operation of the system, a secure long-term source of funding so the service is only interrupted briefly once a year for essential maintenance, and the smooth integration with mass transit systems under a single fare.

And yet, our research in Medellín shows that such systems are more effective at improving access to opportunities while helping to reduce marginality and exclusion when they are complemented with investments in social infrastructure and opportunities for residents and local workers. Medellín's PUI program has been criticized for targeting isolated low-income districts rather than the whole city. This is perhaps a fair criticism, but they have also shown that, however essential, investments in transport alone cannot lift people out of poverty. Additional investment must seek to enlarge and improve the quality of public spaces, provide safer and better-quality housing, promote economic development and deliver social infrastructure services such as libraries offering access to cultural and community spaces, reliable internet and practical skills for people of all ages. Central to it all is a process of consultation and participation in which residents democratically decide on capital investments to benefit the community. A stunning example of how this "participatory budgeting" process (initially developed by Brazil's Workers Party in Porto Alegre) was appropriated by *comuna* 1 and 2 residents lays in the community's decision to use part of the funds not to build a five-a-side pitch or a containment wall, but to fund a group of local youngsters to enroll for university degrees.



Medellín's tram line TA, known as *Tranvía de Ayacucho*, connects Metrocable Línea H with overground metro's Línea A. Photo: Julio D. Dávila (July 2018)

The success of the first *Metrocable* can be gauged not merely in the angry words quoted at the start of this article but can also be seen in the number of outsiders, including international tourists, who regularly visit Santo Domingo Savio, *LíneaK*'s terminal station. Such numbers are particularly poignant when one recalls that in the early 2000s this

was a no-go area even for the police. Such were the risks posed by urban guerrillas and armed gangs at the service of drug lords, that a member of our research team who had worked with the design consultants recalls how he and his colleagues could only enter the area under military protection. Daily life for residents was hell, with stray bullets occasionally injuring or killing children. Once the worst of the violence was under control and former residents started to see first-hand the beneficial effects of the transport and PUI investments, did they return to their former homes.

### **Are Metrocables a sustainable mobility solution?**

For districts like Medellín's low-income hilly northeastern *comunas*, aerial cable-cars have left an indelible mark in terms of much reduced travel times (from a 45-minute trek up steep roads to around 10 minutes sitting comfortably in the air). Their success can also be measured in the long queues that form early in the morning for the downhill commute, and in the evening for the uphill one. Except for residents living close to the somewhat noisy machinery, they are largely silent and pollution free. They draw on hydropower, thus making them an ideal component of an urban decarbonization program.

Despite their lower carrying capacity, for politicians and policy makers their attraction lies in their novelty value, and much shorter design and construction periods than rail-based or even wheel-based mass transit systems like BRTs. In the case of densely and haphazardly built neighborhoods such as Medellín's *comunas* 1 and 2, they also have the advantage that their construction involves little in the way of expropriations and demolition of properties to make space for a road or a railway line. This not only saves plenty of time and money, crucial for a politician seeking re-election, but it also leads to much smaller carbon footprints arising from building demolitions and relocations elsewhere. Preserving the existing urban form and avoiding evictions or relocations is very important to help safeguard the social fabric of the community. And yet, despite their extraordinary advantages as clean, relatively cheap, quickly built transport systems that help improve accessibility in marginal communities, they are still remedial solutions to the entrenched problems of poverty, inequality and informality that mark so much of Latin America's urban life.



Medellín: A view from Metrocable Línea H, launched in 2016. Photo: Julio D. Dávila (July 2018)

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