

# CHAPTER 3

## WHEELS OF CHANGE: INTEGRATING ICT AND ASSISTIVE TECHNOLOGY FOR DISABILITY-INCLUSIVE PUBLIC TRANSPORT IN AFRICA

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### Summary

*Public transportation systems across many African countries remain largely inaccessible to persons with disabilities, which critically hinders their social inclusion and economic participation. Despite technological advances significantly improving the quality of life for the majority of persons with disabilities, 36 per cent in developing countries, particularly in Africa, still regard public transportation as inaccessible due to inadequate infrastructure and slow adoption of assistive technology (AT). This analysis critically examines how Information and Communication Technology (ICT) can integrate AT into African public transportation, promoting accessibility and inclusion. The paper is grounded in the social and human rights model of disability, reinforced by international and regional standards, including the Convention on the Rights of Persons with Disabilities (CRPD) and the African Disability Protocol (ADP). Case studies from South Africa (MyCiTi), Nigeria (Lagos BRT), and Kenya demonstrate that while progress is evident in formal systems through features like audio-visual aids and low-floor buses, these efforts are often limited in scope or undermined by systemic challenges. Key barriers include the pervasive inaccessibility of dominant informal transport networks (matatus, minibuses), the reliability gap caused by inadequate maintenance and non-functional features in existing technology, and the inconsistent enforcement of progressive national policies. Deep-seated socio-cultural issues, such as discrimination by transport operators, also impede true inclusion. Achieving equitable transport demands a comprehensive, multi-stakeholder approach. This necessitates decisive government action to enforce robust policy standards, engagement of private and informal operators through training and*

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*affordable modifications, and collaboration with civil society in the design process to ensure systems are built 'with them'. Ultimately, only a holistic framework that strategically combines ICT and AT with consistent funding, strong policy frameworks, and vital changes in societal awareness can eliminate all obstacles and achieve a fully inclusive transport system.*

## **1 Introduction**

In an increasingly digital world, the integration of Information and Communication Technology (ICT) and assistive technology (AT) has become crucial in fostering disability inclusion. While technological advancements have made significant strides in improving the quality of life for persons with disabilities, public transportation systems in many African countries remain inaccessible to a large portion of the population.<sup>1</sup> This challenge hinders the social inclusion, economic participation, and mobility of persons with disabilities, limiting their access to education, employment, healthcare, and other vital services.

According to the 11th edition of the *Technology and disability report* carried out by Keysight Technologies and the Adecco Foundation, the quality of life for nine out of ten persons with disabilities has been significantly improved by new technology.<sup>2</sup> However, despite these advances, 36 per cent of persons with disabilities in developing countries, particularly in Africa, still regard public transportation as inaccessible due to a lack of inclusive infrastructure and the slow adoption of assistive technology.<sup>3</sup> The public transport systems in Africa often lack provisions for the mobility-impaired, which restricts the movement of millions of individuals and hinders their full participation in society.

This paper critically analyses how ICT can be leveraged to integrate AT into the African public transportation system, promoting accessibility and inclusion for persons with disabilities. By exploring best practices and case studies from South Africa, Nigeria, and Kenya, the paper assesses the current status of ICT-driven accessibility initiatives, the barriers faced, and the opportunities for improvement. The goal is to propose a multi-stakeholder approach, emphasising collaboration between governments, civil society, and private enterprises in driving innovation for an inclusive transport system.

1 United Nations *Sustainable transport, sustainable development* Interagency report for second Global Sustainable Transport Conference (2021).

2 L Clemares 'ICT and disability: Tools for integration' *Telefónica* 15 October 2024 <https://www.telefonica.com/en/communication-room/blog/ct-disability-tools-integration/> (accessed 15 October 2024).

3 UN (n 1).

## 2 Theoretical and conceptual framework

This paper's analysis of public transport and disability is mounted within the social and human rights model of disability. This model fundamentally asserts that physical, systematic, and attitudinal barriers, including inaccessible transport systems, are the elements that hinder persons with disabilities from full and effective participation in society, rather than their individual disabilities.<sup>4</sup> This stands in direct contrast to the medical model perception, which views disability through the medical and deficit-based lens with a focal point on the individual's disability as the root cause of exclusion.<sup>5</sup> The application of the social model underlines the importance of inclusive infrastructure, technologies, and policies in creating an enabling environment. Therefore, the core theoretical premise is that the inaccessibility of public transportation is an actionable barrier to full socio-economic inclusion for persons with disabilities, a barrier which can be overcome by leveraging ICT and AT.

The theoretical premise is normatively enforced by international and regional human rights instruments, establishing accessibility as a right that views exclusion as a consequence of societal barriers. The Convention on the Rights of Persons with Disabilities (CRPD) serves as the foundational global standard, explicitly aiming to promote, protect and ensure the full and equal enjoyment of all human rights and fundamental freedoms by all persons with disabilities, while promoting respect for their inherent dignity.<sup>6</sup> The CRPD embeds the social model framework, defining disability as the result of the interaction between impairments and attitudinal and environmental barriers that hinder full and effective participation in society.<sup>7</sup> The CRPD translates this human rights requirement into specific duties regarding mobility and access.<sup>8</sup> Moreover, it mandates states parties to take appropriate measures to ensure access, on an equal basis with others, to the physical environment, transportation, and information and communications technologies, including systems in both urban and rural areas.<sup>9</sup> This includes the identification and elimination of obstacles and barriers to accessibility. Furthermore, it provides that states parties must take effective measures to ensure personal

4 N Mupita 'Back to basics: From the medical model to the social model of disability rights – Where are we now?' *AfricLaw blog* 26 August 2024 <https://africlaw.com/2024/08/26/back-to-basics-from-the-medical-model-to-the-social-model-of-disability-rights-where-are-we-now/> (accessed 18 September 2024).

5 As above.

6 UN General Assembly, Convention on the Rights of Persons with Disabilities: Resolution/adopted by the General Assembly, 24 January 2007, UN Doc A/RES/61/106 (2007).

7 CRPD, Preamble.

8 CRPD, art 9.

9 CRPD, art 9.

mobility with the greatest possible independence, including facilitating access to quality mobility aids, devices, and ATs at an affordable cost.<sup>10</sup>

Complementing this global framework is the regional Protocol to the African Charter on Human and Peoples' Rights on the Rights of Persons with Disabilities in Africa (African Disability Protocol).<sup>11</sup> The purpose of this Protocol is to promote, protect and ensure the full and equal enjoyment of all human and peoples' rights by all persons with disabilities in Africa.<sup>12</sup> The Protocol's General Principles emphasise ensuring accessibility and reasonable accommodation.<sup>13</sup> This regional instrument reinforces the global mandate by conferring upon every person with a disability the right to barrier-free access to the physical environment, transportation, and communication technologies. It explicitly requires states parties to take progressive steps to ensure this accessibility in rural and urban settings, mandating the modification of all inaccessible infrastructure and the universal design of all new infrastructure.<sup>14</sup>

These international and regional standards underpin national policy efforts. The analysis uses these established normative standards to highlight that the central challenge across the continent is the inconsistent enforcement of these progressive mandates, which acts as a significant roadblock, leading to accessibility gaps and restricting the full socio-economic participation of persons with disabilities.

### **3 Role of ICT and AT in disability-inclusive transport systems**

Many have argued that ICT is one of the key factors in socio-economic development.<sup>15</sup> They also believe that the introduction of ICT in Africa will foster development. This has led to the penetration of ICT systems in many sectors in Africa; however, the use of these systems has been saddled by underdeveloped or non-existent ICT infrastructure.<sup>16</sup> ICT encompasses a broad range of technologies used to manage and communicate information digitally. In the context of public transport, ICT includes mobile applications, GPS-based systems, real-time data tools, and smart technologies that enhance the experience of users, particularly those with

10 CRPD, art 20.

11 African Union, Protocol to the African Charter on Human and Peoples' Rights on the Rights of Persons with Disabilities in Africa, adopted by the 30th ordinary session of the Assembly, held in Addis Ababa, Ethiopia, 29 January 2018.

12 ADP, art 2.

13 ADP, art 15.

14 ADP, art 15.

15 N Roztocki and others 'The role of information and communication technologies in socioeconomic development: Towards a multi-dimensional framework' (2019) 25 *Information Technology for Development* 171.

16 M Dwomoh-Tweneboah 'Information technology for Africa' (2008) 17 *Revista de Educação do Cogeime* 166.

disabilities. However, with the perceived benefits of ICT, it presents a double-edged sword for persons with disabilities. It can disadvantage persons with disabilities, this is due to the lack of access to technology and skills, causing a digital divide and the inaccessibility of content on digital platforms which were designed without accessibility in mind.

However, the other edge of the sword presents opportunities for ICT accessibility through AT. ICT accessibility entails intentionally designing and deploying technologies that anyone can use, despite their abilities.<sup>17</sup> This includes using AT, which refers to systems and devices created to boost the functional capabilities of persons with disabilities and provide them with comprehensive access to ICTs. In public transportation, examples of ATs include but are not limited to tactile maps, audio announcements, and lowering mechanisms. Such design and implementation of disability-inclusive transport systems ensures equal access and opportunities for persons with disabilities.

Recognising that technology offers convenience and simplifies life for everyone, it holds even greater significance for individuals with disabilities. It enables them to lead independent lives, allowing equal access to spaces, services, and products alongside others. Therefore, accessibility of transport systems is more than just moving from point A to B; it is about enabling persons with disabilities to live independently and participate in all aspects of life.<sup>18</sup> With persons with disabilities making up approximately 1.3 billion of the world's population,<sup>19</sup> including more than 188 million people across Africa,<sup>20</sup> ICT and AT, if harnessed appropriately, have the potential to enhance accessibility in public transportation systems.

AT in public transport takes different forms; these can either be personal, vehicle-based, or infrastructure-based.<sup>21</sup> They enhance transportation self-efficacy among persons with disability and significantly boost confidence by offering user-friendly tools that simplify navigation and planning for public transport, enabling individuals to feel more capable of travelling independently. These technologies, such as mobile applications providing real-time updates and tailored support, facilitate independence and reduce reliance on others, ultimately empowering users to explore new transportation options. Integrating ICT and AT represents a transformative opportunity to improve mobility and quality of life for

17 EnableMe 'Inclusive ICT and disability' <https://www.enableme.ke/en/article/inclusive-ict-and-disability-399> (accessed 12 October 2024).

18 CRPD, art 19.

19 World Health Organisation 'Disability' <https://www.who.int/health-topics/disability> (accessed 3 December 2024).

20 World Health Organisation 'International Day of persons with disabilities' <https://www.afro.who.int/regional-director/speeches-messages/international-day-persons-disabilities-day-2025> (accessed 7 December 2025).

21 Kentkart 'Assistive technologies for accessible public transport' <https://www.kentkart.com/assistive-technologies/> (accessed 5 October 2025).

persons with disabilities by fostering greater confidence and independence in transportation. However, in the transportation industry, providing disability inclusion has become a niche, and persons with disabilities, especially those with physical disabilities, bear the burden of paying almost triple the price of the fare due to the requirements of aides.<sup>22</sup>

## **4 ICT-driven accessibility in African public transport systems**

Public transport systems across Africa face significant challenges in terms of accessibility for persons with disabilities. From poorly designed infrastructure to the absence of ATs, many urban and rural transport networks fail to accommodate the diverse needs of persons with disabilities. With 36 per cent of persons with disabilities in developing countries citing transportation as inaccessible, the barriers faced in African countries are not unique.<sup>23</sup> Still, they are exacerbated by inadequate infrastructure, service quality, lack of action plans and funding constraints.<sup>24</sup> In cities like Lagos, Nairobi, and Cape Town, where rapid urbanisation has outpaced the development of adequate public services, there is evidence that evolving transport infrastructure fails to include accessible features like ramps, tactile paving, and audio-visual aids. Furthermore, informal transport systems such as minibuses and motorbike taxis dominate the market in many African cities, and these services typically lack the necessary provisions for accommodating persons with disabilities.

However, to assert that there is no effort to establish disability-inclusive transportation systems in these countries would be inaccurate, as research indicates that several African nations are beginning to leverage ICT to enhance the accessibility of public transportation.<sup>25</sup> Although these initiatives mark progress toward more inclusive transport systems, they are often confined to specific provinces and cities, resulting in benefits for only certain populations and leaving others without adequate access.<sup>26</sup>

To explore the application and challenges of integrating ICT and AT into African public transport systems, this section provides critical case studies from South Africa, Nigeria, and Kenya, assessing the current status

22 Flone Initiative *Policy brief on the need for inclusive transport in Kenya* (2022).

23 UN (n 1).

24 B Duri & R Luke 'Transport barriers encountered by people with disability in Africa: An overview' (2022) 16 *Journal of Transport and Supply Chain Management* 1, 2.

25 Guest writer 'The rise of digital transportation solutions in African countries' *ICT Works* 21 June 2023 <https://www.ictworks.org/digital-transportation-solutions-african-countries/> (accessed 20 October 2024).

26 Disability Info SA (DISA) 'Transport services & vehicle hire' <http://disabilityinfo.sa.co.za/mobility-impairments/transport-services-vehicle-hire/> (accessed 21 November 2024).

of ICT-driven accessibility initiatives, the barriers faced, and the opportunities for improvement.

#### 4.1 South Africa

South Africa has made significant strides in disability-inclusive public transportation, with systems like Cape Town's MyCiTi Integrated Rapid Transport (IRT) leading the way in accessible design.<sup>27</sup> MyCiTi is the first transport system in sub-Saharan Africa to integrate universal access features across its stations, vehicles, and facilities.<sup>28</sup> To cater for passengers with diverse disabilities, the MyCiTi system includes features such as tactile paving for users with visual disabilities, wide entrance gates without turnstiles for easier access, and wheelchair-accessible toilets. Further, for seamless boarding, level boarding, and wheelchair users, designated spaces are included on these low-floor kneeling buses. They also provide audio screens that display service information that provides travel updates that are crucial in formats that are accessible, with trained onsite customer support staff to assist passengers with disabilities.

For persons who cannot use conventional public transport, kerb-to-kerb services are provided under a service called 'Dial a Ride'.<sup>29</sup> This programme regularly supports about 350 users and additional passengers on an ad-hoc basis, offering essential lifelines for persons with mobility disabilities.<sup>30</sup> More services are provided in other cities in South Africa, where accessible features have been adopted to improve inclusion. In cities such as Johannesburg and Pretoria, notably, systems like the Gautrain network<sup>31</sup> and Rea Vaya Bus Rapid Transit (BRT)<sup>32</sup> provide passengers with real-time travel information, enabling easier navigation for persons with disabilities seeking more flexible travel options. Moreover, they have accessible stations, low-floor buses with ramps and audible announcements to guide passengers.

27 KIPPRA 'Enhancing accessibility in transport infrastructure by PWDs' (28 July 2020) <https://kippra.or.ke/enhancing-accessibility-in-transport-infrastructure-by-pwds/> (accessed 20 October 2024).

28 MyCiTi 'Myciti recognised as a world leader in universal access' (28 February 2014) <https://www.myciti.org.za/en/contact/media-releases/MyCiTi-recognised-as-a-world-leader-in-universal-access> (accessed 5 December 2024).

29 MyCiTi 'Dial a Ride' <https://www.myciti.org.za/en/routes-stops/dial-a-ride/> (accessed 21 October 2024).

30 As above.

31 Gautrain 'Passengers with disabilities' <https://www.gautrain.co.za/commuter/general-information#> (accessed 15 December 2024).

32 City of Johannesburg 'Jozi's new BRT trunk route to be universally accessible' [https://joburg.org.za/media\\_/Newsroom/Pages/2017%20Articles/Jozi%E2%80%99s-new-BRT-trunk-route-to-be-universally-accessible.aspx](https://joburg.org.za/media_/Newsroom/Pages/2017%20Articles/Jozi%E2%80%99s-new-BRT-trunk-route-to-be-universally-accessible.aspx) (accessed 25 October 2025).

Despite these advancements, South Africa's transport system still has limitations. While large formal operators like PUTCO Bus Services deliver a 'safe, reliable and affordable service' across critical commuter routes,<sup>33</sup> including Soweto, Soshanguve, and Western Mpumalanga, their dedicated provisions for persons with disabilities remain highly limited.<sup>34</sup> PUTCO operates only two disability friendly buses under its 'differently abled bus services' in the Northern region. These buses are confined to specific routes, transporting passengers with disabilities in the Soshanguve area daily to the Tshwane central business district for employment, or servicing villages in the Mpumalanga area to take learners with disabilities to the nearest dedicated school, with passengers able to buy a special discounted ticket.<sup>35</sup> These limited initiatives demonstrate that accessible services are often restricted in scope, underscoring that many rural areas and peri-urban regions are left without accessible public transport, restricting opportunities for persons with disabilities living outside major cities. The broader challenge persists because South Africa's public transport system is dominated by minibus taxis.<sup>36</sup> These ten to 15-seater buses penetrate every city's last section, including the poorest settlements and are the cheapest form of transport for the working population.<sup>37</sup> However, these do not provide accessible infrastructure, therefore making access for persons with disabilities difficult.

Furthermore, enforcing disability-inclusive policies, such as those outlined in the National Land Transport Act,<sup>38</sup> which mandates universal access to public transport, the White Paper on National Transport Policy,<sup>39</sup> and other government policies, remain inconsistent.<sup>40</sup> This has led to gaps in policy implementation, where accessible infrastructure is available in some regions but remains lacking in others. While ICT and AT, like the audio announcements and low-floor kneeling buses, contribute to a more inclusive system, the high cost of specialised features and uneven access to supportive technologies can limit the broader adoption needed for true national accessibility. The current model, while innovative, highlights a pressing need for expanded coverage, sustained policy enforcement, and more significant investment to ensure that accessible transport truly reaches all South Africans, including those in underserved areas.

33 Putco Bus Services 'Our services' <https://putco.co.za/Pages/Our-Services.asp> (accessed 7 December 2025).

34 As above.

35 As above.

36 Arrive Alive 'Public Transport' <https://www.arrivealive.mobi/Public-Transport> (accessed 21 November 2024).

37 As above.

38 National Land Transport Act 5 of 2009.

39 Department of Transport *White paper on National Transport Policy* (2021).

40 South African Human Rights Commission *Investigative inquiry into accessibility of public transport in Gauteng for people with disabilities* (2023).

## 4.2 Nigeria

In Nigeria, studies have shown that the transportation systems are inaccessible for persons with disabilities. A study by Mogaji and Nguyen explored the interaction between passengers with disabilities and the public transport service provider in Lagos.<sup>41</sup> The study focused on Danfos' 14 to 18-seater yellow minibuses operating informally and unregulated. It found that passengers with disabilities were dissatisfied with the Danfos operators' poor service and the other passengers' negative attitudes.<sup>42</sup> Further, a lack of commitment to accommodate persons with disabilities was shown by drivers who were most worried about meeting targets, showcasing a lack of empathy and awareness of disabilities.<sup>43</sup>

The Lagos Bus Rapid Transit (BRT) is an alternative to the Danfos. The Lagos BRT system has promising initiatives, including more space and ramps for wheelchair access, audio-visual announcements, route tracking apps, and automated audio-visual announcements to help passengers with hearing and visual disabilities.<sup>44</sup> With a population of 29 million persons with disabilities,<sup>45</sup> the country has made strides in leveraging ICT and ATs to improve the accessibility of its transport systems. However, unlike Danfos, which operates almost everywhere, the BRT operates on a specific route (running from Mile 12 through Ikorodu Road and Funsho Williams Avenue up to CMS),<sup>46</sup> thus making it not entirely accessible. Even with these ICT advances that the Lagos BRT offers, maintenance of the technologies remains a problem. An investigation of the Lagos BRT system bus terminals and routes done in 2021 showed that the system does have accessibility features.<sup>47</sup> However, the features are often poorly maintained or non-functional; for instance, the poor ramps require attendants to carry wheelchair users onto buses.<sup>48</sup> Moreover, while mobile apps assist with route tracking, the lack of voice command makes it difficult for passengers with visual disabilities, who have to depend on others for help. The lack of trained staff exacerbates these challenges and limits the effectiveness of ATs already in place.

41 E Mogaji & NP Nguyen 'Transportation satisfaction of disabled passengers: Evidence from a developing country' (2021) 98 *Transportation Research Part D: Transport and Environment* 102982.

42 As above.

43 As above.

44 B Otunola and others 'The BRT and the *danfo*: A case study of Lagos' transport reforms from 1999-2019' (2019) 21.

45 World Bank Group *Disability inclusion in Nigeria: A rapid assessment* (2020) VII.

46 Lagos Metropolitan Area Transport Authority 'BRT' <https://www.lamata-ng.com/bus-services/> (accessed 05 December 2025).

47 T Igomu 'Disabled by fate, denied rights to mobility: Nigerians living with disabilities tell tales of anguish accessing public transportation' *Punch Newspapers* 12 September 2021 <https://punchng.com/disabled-by-fate-denied-rights-to-mobility-nigerians-living-with-disabilities-tell-tales-of-anguish-accessing-public-transportation/> (accessed 21 October 2024).

48 As above.

Nigeria needs to develop an accessible and inclusive public transport system that enhances the independence and quality of life of persons with disabilities. It shows that the strides to achieving accessibility in improving its system are still limited to formal transportation systems like BRT, with little or no integration across the vast network of informal minibuses and motorbike taxis.

### 4.3 Kenya

In Kenya, like in many other African countries, the informal shared minibuses (*matatus*) and motorbikes (*boda boda*) dominate the public transport system. These transport options are not designed with accessibility in mind, posing major barriers to persons with disabilities. Although there are efforts to modernise the Kenyan transport system through innovations like the *Huduma* card and mobile payment platforms to improve efficiency, they overlook the specific needs of persons with disabilities, such as wheelchair ramps and low floors, forcing persons with disabilities to opt for expensive transport services like ride-hailing services. Compounding the challenges is the fact that the availability of accessible ride-hailing transport is also scarce. Uber introduced UberAssist in 2019 to serve persons with mobility disabilities.<sup>49</sup> The service has since been unofficially discontinued as it is not available as an option on the e-hailing website and the mobile application, leaving a gap in transportation options for persons with disabilities.<sup>50</sup>

A study by the Flone Initiative revealed that 77 per cent of persons with disabilities rely on public transport, yet 94 per cent report that *matatus* are not adapted to their needs.<sup>51</sup> Passengers with disabilities experience frequent discrimination, with operators refusing service or using derogatory language.<sup>52</sup> Additionally, the absence of designated seating and inadequate terminal infrastructure limits their mobility. At the same time, unregulated fare systems burden persons with disabilities with higher costs, especially those who require aides or wheelchairs.<sup>53</sup>

According to the Kenyan government, there are plans to launch a Bus Rapid Transit (BRT) in Nairobi.<sup>54</sup> This initiative will offer a promising step towards inclusive transportation for persons with disabilities. The

49 'UberASSIST: Making Nairobi more accessible' *Uber blog* 3 January 2019 <https://www.uber.com/en-KE/blog/uberassist-making-nairobi-more-accessible/> (accessed 11 November 2024).

50 Checked on 20 October 2024.

51 Flone Initiative 'The accessibility of public transport service in Nairobi Metropolitan Area' (2021).

52 As above.

53 As above.

54 E Manga 'Can the on-going Nairobi BRT Project guarantee a just transition? Signposts from Labour Impact Assessment Report and other studies' ATINER's Conference Paper Proceedings Series TRA2024-0333 Athens, 5 September 2024, 3.

government asserts this new BRT fleet will feature inclusive features like designated spaces for mobility devices, automated ramps, and priority seating.<sup>55</sup> In addition, more features, such as digitised signage and automated stop announcements for passengers with sensory disabilities, will be included to allow for independent travel.<sup>56</sup> Moreover, real-time route updates and GPS tracking will be available to reduce uncertainty and ensure timely travel.

Despite all these promising planned innovations, the new BRT system will cover little ground, and the issue remains the inclusion of persons with disabilities who reside in the peri-urban and rural areas. Kenya's progress toward accessible transport requires more than technological upgrades. It demands inclusive policies, operator training, and public awareness campaigns. Without these efforts, persons with disabilities will continue to face exclusion from important socio-economic and political activities, infringing their right to accessible mobility as guaranteed by Kenya's Constitution<sup>57</sup> and the Persons with Disabilities Act of 2025.<sup>58</sup>

## 5 Analysis of implementation barriers and systemic challenges

The integration of ICT and AT in African public transport systems reveals a complex interplay of challenges that significantly impact mobility access for persons with disabilities. Examining implementation efforts in South Africa, Nigeria, and Kenya reveals several critical barriers that must be addressed to achieve meaningful progress in transport accessibility. These challenges span multiple dimensions, from physical infrastructure to societal attitudes, creating a multilayered problem that requires comprehensive solutions.

A significant challenge lies in the pronounced disparity between urban and rural areas, particularly regarding accessible infrastructure. South Africa exemplifies this issue well. In Cape Town, the MyCiTi system offers a range of comprehensive accessibility features; however, in rural regions or even peri-urban areas, the options available for individuals with disabilities are drastically reduced. Often, there is virtually nothing in terms of support.

The situation becomes more complicated when the significant role of informal transport networks is factored in, an issue prevalent in all African countries. This is also evident in Kenya, where 77 per cent of persons with

55 KIPPRA (n 27).

56 Institute for Transportation and Development Policy 'Service plan for Nairobi BRT Line 2' (2019)

57 Constitution of Kenya, 2010.

58 Persons with Disabilities Act, 2025.

disabilities rely on public transport, and 94 per cent report that the *matatus*, the main informal buses, are inaccessible.<sup>59</sup> These illustrate the significant gap between the need for transport and the utilisation of what is available. People rely on a system that often excludes them; these informal networks are frequently the only option available outside the major cities, exacerbating geographical inequalities.

Furthermore, ICT and AT are intended to provide support, but their implementation often presents a unique set of challenges. The practical aspects involve not only installing the technology but also, and perhaps more importantly, ensuring its ongoing functionality, which can be a significant obstacle. Nigeria's BRT system exemplifies various implementation issues, with instances of audio announcements malfunctioning or wheelchair ramps being out of order.<sup>60</sup> Frequently, these problems appear to arise from inadequate maintenance. This results in a reliability gap; individuals with disabilities are unable to depend on these features being operational when needed. Consequently, this undermines their confidence in the system, making the experience of using public transport more stressful and anxiety-inducing, which complicates journey planning and their ability to move independently.

The challenges extend beyond malfunctioning equipment. Even when technology is operational, its design may not be appropriate. For example, transport navigation apps, which are tools created to help everyone navigate their surroundings, are, in principle, beneficial. However, many of these apps lack essential accessibility features, such as compatibility with screen readers or voice commands, which effectively excludes persons with visual disabilities. Ironically, the very technology meant to promote inclusivity can inadvertently create new barriers if not designed with care. This highlights the dangers of partial implementation; addressing one issue while overlooking another can perpetuate the exclusion of certain individuals.

On the critical area of policy: how effectively are those good intentions translating into practical outcomes? Policies on paper must align with real-world implementation. South Africa serves as a good example, boasting comprehensive policies for disability inclusion; however, the challenge lies in consistent application. Research indicates that inconsistent enforcement acts as a significant roadblock.<sup>61</sup> One might find notable examples of accessibility in certain locations, yet it is not enforced system wide. A lack of standardised enforcement mechanisms and weak monitoring cycles contribute to this inconsistency. Regarding the Kenyan BRT plans, there are promises for future accessibility, but for now, the existing, largely

59 Flone Initiative (n 51).

60 Igomu (n 47).

61 B Duri & R Luke 'Assessing accessibility of transport and universal access in the City of Tshwane using expert opinion' (2024) 13 *Social Sciences* 690.

inaccessible services just keep running. Thus, there is a disconnect between the policy goals and what is happening day to day. This is evidence that having progressive policies is not enough; implementation and enforcement are crucial missing pieces. There is a need to look beyond the physical elements and policies.

Socio-cultural barriers are fundamental. One may have all the ICT and AT in the world, but it cannot magically resolve deeply entrenched negative attitudes. The experiences of persons with disabilities on the Kenyan *matatus* illustrate this, with cases of the kind of discrimination that persons with disabilities face being offensive comments, drivers refusing to pick them up, or being charged more simply because they have a disability.<sup>62</sup> This underscores that making transport truly inclusive is not solely about ramps and apps; it is also about addressing these negative perceptions head-on and fostering a culture where everyone is treated with respect and dignity.

The cost of specialised equipment is high, and ongoing costs such as maintenance, upgrades, and training staff add up, presenting a huge financial challenge, especially when resources are already stretched thin. The Nigerian BRT system exemplifies this, where maintenance issues often link back to insufficient or unsteady funding.<sup>63</sup> It can create a vicious cycle: lack of funding leads to unreliable services, which may discourage usage and make it harder to argue for further investment down the line. However, looking at South Africa's MyCiti system, it shows that with significant, sustained investment, comprehensive accessibility can be achieved. This highlights the importance of prioritising this issue and consistently allocating enough resources over time.

Further, the lack of smooth integration between different modes is another significant systemic issue. Most cities often have formal systems like BRTs existing alongside informal ones like minibuses, operating under entirely different rules and standards of accessibility. Examining South Africa, there is a contrast between the more accessible BRT buses and the traditional minibus taxis, which often have zero accessibility features. Striving for standardised accessibility across that fragmented landscape is incredibly difficult. For example, if a person needs to switch from a BRT to a minibus to complete their journey, and one is accessible while the other is not, it disrupts the travel chain. This makes independent travel challenging, if not impossible, for many persons with disabilities.

A complex knot of interconnected barriers and systemic challenges: the urban-rural infrastructure gap, the significant challenge of inaccessible

62 Flone Initiative (n 51).

63 FD Diallo 'Lagos' impossible bus rapid transit: Implementing and keeping together Lagos' first mass-transit project in a paratransit-dominated and financially challenged urban transport landscape' (2025) 72 *EchoGéo* 1.

informal transport, practical issues with implementing and maintaining technology, and the gap between policy and practice is evident. Additionally, socio-cultural attitudes, real economic constraints, and the lack of integration between different transport modes all play a role. What is important is that these issues are not separate; they feed into and reinforce each other, creating an entire ecosystem that makes achieving truly equitable, universally accessible public transport incredibly difficult.

## **6 Making African transport inclusive for persons with disabilities**

Achieving a truly inclusive transport system across Africa necessitates a comprehensive, multi-stakeholder approach that strategically integrates diverse efforts to dismantle persistent physical, technological, economic, and attitudinal barriers. The inherent complexity of these challenges underscores that technical solutions alone are insufficient, demanding instead a cohesive and collaborative framework where progress in one area is deeply intertwined with advancements in others.

Governments are indispensable catalysts in this endeavour, tasked with establishing robust policy frameworks that mandate universal design, ensure clear enforcement through regular audits, and implement inclusive fare policies without discrimination. Furthermore, public entities must foster financial sustainability through crucial government incentives, such as tax credits for operators investing in accessibility, and targeted subsidy programmes, particularly for low-revenue rural services.

The private sector, encompassing both formal and predominant informal operators (for example, minibuses and motorbike taxis), is vital for driving innovation and implementation. Leveraging private investment through public-private partnerships (PPPs) is crucial for financing accessible infrastructure and vehicles. Engaging informal operators requires tailored approaches, including targeted awareness campaigns, practical training on disability etiquette, and exploring affordable modifications to existing vehicles. Maintenance protocols, consistent funding, and the availability of trained technicians are also essential to ensure the longevity and effectiveness of accessible solutions.

A collaborative model between disability organisations and civil society at large is essential, not just as recipients but also as important collaborators in the process. Their feedback mechanism and active participation in the design and testing of transport solutions, ensuring that systems are built ‘with them’, not just ‘for them’, cannot be overstated. Aside from technical elements, civil society is crucial in addressing the human aspect, stimulating greater social development through disability awareness and sensitisation initiatives for transport personnel and the public, ultimately breaking down adverse perceptions and inequity.

Ultimately, the need to develop a transport system that is inclusive and empowers persons with disabilities to participate fully in society calls for a collective dedication. A holistic, multi-stakeholder strategy approach that strategically employs information and communication technology along with assistive devices, supported by a strong policy framework, consistent funding and vital changes in societal awareness, is the only practical means to eliminate all obstacles and achieve a transport system in Africa that is both accessible and equitable.

## 7 Conclusion

While initiatives leveraging ICT, such as real-time tracking apps and audio-visual aids in formal systems like Cape Town's MyCiTi and the Lagos BRT, demonstrate progress, these efforts are often limited in scope or undermined by implementation issues. Specific barriers include the reliability gap caused by inadequate maintenance and non-functional accessibility features, inconsistent enforcement of progressive policies, and deep-seated socio-cultural issues like discrimination by transport operators.

Achieving truly equitable transport across Africa demands a comprehensive, multi-stakeholder approach to dismantle these persistent physical, technological, economic, and attitudinal barriers. This framework requires decisive action: governments must establish and enforce robust policy standards, private and informal operators must be engaged through targeted training and affordable modifications, and civil society must collaborate in the design process to ensure systems are built 'with them'. Ultimately, only a holistic strategy, combining the strategic employment of ICT and AT with consistent funding, strong policy frameworks, and vital changes in societal awareness, is the practical means to eliminate all obstacles and achieve a transport system that empowers persons with disabilities to participate fully and equally in African society.

