

Walking at the Margins: Spatial Justice, Social Exclusion and Inclusive Mobility in Urban Accra

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abstract

Urbanisation across sub-Saharan Africa is remaking how people move, yet pedestrian infrastructure rarely features in urbanisation agendas. Most residents of Accra walk to get where they are going, and those with the fewest alternatives walk the most; however, planning and governance systems have not been built around them. This study examines inclusive walkability in Madina and Adenta, two fast-growing municipalities in the Greater Accra Metropolitan Area, drawing on semi-structured interviews with six elderly residents, ten pregnant women, four persons with disabilities, and two municipal road officials, as well as systematic field observation. We read the evidence through a spatial justice framework that brings together distributive, procedural, and recognitional dimensions, using Social Exclusion Theory to explain how disadvantage is produced and Universal Design to provide criteria for evaluating the built environment. This lets us specify what the Accra scenario adds to transport-related social exclusion scholarship, rather than restating that scholarship in a new setting. We advance three propositions. Exclusion is generated by a custodial gap; the institutional separation of the mandate to build pedestrian infrastructure from the mandate to keep it usable, in which provision decays into exclusion with no actor accountable for the outcome. Transport exclusion here is a condition of the majority mode rather than of a car-less minority, so its causal centre lies in institutional non-recognition of walking rather than in individual resource deficit. And provision itself can exclude through infrastructural inversion, where interventions that reduce aggregate risk redistribute residual risk onto elderly, pregnant and disabled pedestrians, compounding on the same bodies. Building infrastructure is not the same as providing access. We argue that inclusive walkability belongs in debates about governance and justice rather than in the technical registers of transport planning, and that the everyday experience of vulnerable pedestrians is the clearest available evidence of what an equitable urban transition would require.

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Introduction

Few regions are urbanising as quickly as sub-Saharan Africa (UN-DESA, 2018; Wang & Kintrea, 2021). In Ghana, growth on the fringes of the Greater Accra Metropolitan Area has placed land, infrastructure and mobility systems under sustained strain (Doan & Oduro, 2012). New roads and interchanges are read as evidence of a modernising city, while walking, which carries far more daily traffic, attracts little planning attention and less funding (Amoako et al., 2014; Mitullah et al., 2017). This imbalance is the starting point of this study. Walking is beneficial for cities. It produces no emissions, improves health and costs the public purse very little (Baobeid et al., 2021; Millard-Ball et al., 2025). Northern policy agendas have made a virtue of this, with the “15-minute city” promising proximity, density and streets designed around people on foot (Barbieri et al., 2023; Moreno et al., 2021). In much of the Global South, the calculation runs the other way. People walk because fares are unaffordable, buses are unreliable, and cars are out of reach (Bryceson et al., 2003; Delclòs-Alió et al., 2022). Walking is the default rather than the choice,

and the footways that should carry it are broken, discontinuous or occupied (Obeng-Atuah et al., 2017; Oviedo & Nieto-Combariza, 2021).

Research in Ghana has documented the planning cultures that produce this: a settled preference for car use, weak enforcement, and non-motorised transport treated as an addition to the development strategy rather than part of it (Acheampong & Ibrahim, 2016; Amoako et al., 2014; Tuffour et al., 2025). Studies in Accra and Kumasi show how missing footways, dangerous crossings and encroached walkways translate into injury and lost access (Amoako et al., 2014; Obeng-Atuah et al., 2017), and the region records some of the highest pedestrian fatality rates in the world (Visser et al., 2017; World Health Organization, 2023). The existing literature says little about how particular people get through an ordinary day on these streets: an elderly man on an uneven surface, a woman late in pregnancy, or someone crossing on crutches. The literature records little about the institutional arrangements that make those days predictable rather than accidental.

The Social Exclusion Theory offers one way to think about this. Developed to explain how disadvantage accumulates across several domains at once, it has been extended to transport to show how restricted movement cuts people off from work, care and social life (Church et al., 2000; Lucas, 2012, 2019). Universal Design supplies a second lens, insisting that environments should work for the full range of bodies and ages without special adaptation (Imrie & Hall, 2001). Each framework does something the other cannot, and each was developed in settings whose assumptions do not travel intact to peri-urban

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Accra. Social Exclusion Theory was formulated in contexts where the excluded were a car-less minority within a motorised majority and where a reasonably capable welfare and enforcement apparatus could be assumed. Universal Design offers a technical standard, but no account of why standards go unmet, and its universalism can obscure precisely the differentiated needs that a social exclusion analysis foreground. Reading the two together without acknowledging this tension risks describing Accra's streets rather than explaining them.

We therefore adopt spatial justice as the integrating frame. This literature treats the geography of (in)justice as constitutive of justice itself rather than as its container (Fainstein, 2010; Soja, 2010), and distinguishes distributive, procedural and recognitional dimensions of justice claims (Fraser, 2009; Young, 1990). Both moves have been taken up in transport and mobility scholarship (Martens, 2017; Pereira et al., 2017; Sheller, 2018) and have been applied specifically to African urban contexts (Cobbinah & Finn, 2024). Spatial justice mediates between the two frameworks: it asks who receives what infrastructure, who decides and who enforces, and whose bodies are treated as the design subject in the first place. It also gives the analysis a criterion of adequacy that neither framework supplies alone.

We argue that pedestrian infrastructure in rapidly urbanising African cities is not simply a technical deliverable, but a site where exclusion is made and remade. Walkability, on this reading, is produced socially: by how budgets are set, which encroachments are tolerated, which design standards are applied, and how people negotiate the remaining space. When safety is treated as the marginal item in a budget, when a footway is occupied without consequence, and when inclusive design is applied unevenly, the costs fall on the same groups.

The paper draws on qualitative fieldwork in Madina and Adenta, two municipalities on Accra's expanding edge where mixed land use, strained infrastructure and informal spatial practice are everyday conditions (Cobbinah et al., 2018; Doan & Oduro, 2012). Through interviews with vulnerable residents and two municipal road officials, supported by systematic observation, we trace how ordinary journeys expose the structural inequalities running through Accra's urban transition.

Rather than claiming that the study extends Social Exclusion Theory, we state at the outset what that extension entails and then test it against the evidence. We advance three propositions, each naming a mechanism that existing formulations have not so far been specified to capture, and each returned to explicitly in the analysis. P1 (custodial gap): where the mandate to build pedestrian infrastructure is institutionally separated from the mandate to keep it usable, exclusion is produced by the unaccountable interval between provision and enforcement, which requires infrastructure to be theorised as a flow requiring continuous custodianship rather than as a stock that is either present or absent. P2 (majority-mode exclusion): where walking is the dominant mode rather than a residual condition, transport exclusion originates in the institutional non-recognition of that mode rather than in individual deficits of access, shifting the causal centre of the theory from distribution towards recognition. P3 (infrastructural inversion): provision can itself exclude, where interventions that lower aggregate risk redistribute residual risk onto elderly, pregnant and disabled pedestrians, and these redistributions compound on the same bodies. Together, these propositions reframe inclusive walkability as a problem of governance and justice rather than design alone, and draw out the contradiction between the sustainability language cities now use and their continued neglect of the people already walking.

Urban Walkability, Social Exclusion and Spatial Justice ***Walkability in Rapidly Urbanising Contexts***

Walkability has become a fixture of sustainable urban policy, tied to lower emissions, better public health and more liveable streets (Baobeid et al., 2021; Westenhöfer et al., 2023). The "15-minute city" and related proposals put proximity, mixed use and pedestrian priority at the centre of post-carbon urbanism (Barbieri et al., 2023; Moreno et al., 2021). In these settings, planners deliberately produce walkability, backed by compact forms, enforcement capacity, and decades of investment in footways.

Conditions in the Global South differ in kind, not degree. Across sub-Saharan African cities, walking dominates because incomes are low, vehicles are scarce, and public transport is unreliable (Bryceson et al., 2003; Delclòs-Alió et al., 2022; Mitullah et al., 2017). Its prevalence has not been matched by

investment. Footways remain thin, broken or occupied (Obeng-Atuah et al., 2017; Oviedo & Nieto-Combariza, 2021), and planning systems have inherited a preference for vehicular movement that persists even where few residents drive (Amoako et al., 2014; Mitullah et al., 2017). The analytic consequence matters: a walkability literature built around the problem of inducing walking has limited purchase where walking is already near-universal and the problem is the absence of institutional support for it.

Ghana's peri-urban expansion has widened these deficits, especially where land use is mixed, settlement outpaces servicing, and regulation is thin (Cobbinah et al., 2018; Doan & Oduro, 2012). Policy has caught up rhetorically, with sustainable mobility and non-motorised transport now written into national and municipal frameworks, but implementation lags far behind (Acheampong & Ibrahim, 2016; Tuffour et al., 2025). This results in the creation of a city where walking is both ubiquitous and unsupported. Making sense of this requires more than an inventory of kerbs and crossings. It requires attention to how institutional priorities, governance arrangements and socio-spatial inequality shape what a journey on foot actually involves.

Mobility, Social Exclusion and the Limits of Existing Formulations

The Social Exclusion Theory was developed to capture disadvantage operating across several dimensions simultaneously. Applied to transport, it shows how unequal access to movement narrows participation in economic, social and civic life (Church et al., 2000; Lucas, 2012, 2019). In this framing, mobility is not movement for its own sake; it is the means of reaching a school, clinic, employer, or relative. Church et al. (2000) disaggregated the concept into categories of exclusion, including physical, geographical, temporal, and fear-based exclusion, while Lucas (2012) modelled the interaction between transport disadvantage and social disadvantage, which produces transport poverty and, through inaccessibility, social exclusion. Subsequent work has consolidated the field and pressed for closer attention to the mechanisms rather than the correlates of exclusion (Lucas, 2019).

The empirical corollary is well established. Where transport systems are organised around vehicle throughput, missing footways, poor crossings, unlit streets, and inaccessible design bear hardest on those who must walk the most. Older adults, pregnant women and persons with disabilities encounter physical obstacles and institutional indifference at the same time, because planning decisions are seldom made with their journeys in view (Porter et al., 2011; Schwartz et al., 2022).

These formulations are powerful, and we adopt them. Our argument concerns not their internal adequacy, but the settings for which they have so far been specified, and the distinction matters enough to state carefully. Church et al. (2000) and Lucas (2012) were writing about British and, more broadly, European cities, and neither claims universal scope; the assumptions we identify below are conditions of the empirical contexts in which the framework was elaborated and subsequently applied, not defects in its formulation. Lucas (2019) has argued that the field needs to move from the correlates of exclusion towards its mechanisms, and has identified the limited engagement with rapidly urbanising cities as a gap in the literature rather than a settled boundary of the theory. A substantial body of work has since begun to address that gap, in Accra and elsewhere (Okyerere et al., 2024; Oviedo & Nieto-Combariza, 2021; Porter et al., 2011). We therefore position what follows as a development of the framework along a line its own proponents have marked out, and we do not claim to be the first to take transport-related exclusion into a Global South setting. What we offer is a specification of three mechanisms that this setting makes visible but that the framework does not, at present, name.

Three assumptions require examination before the framework can do explanatory work in peri-urban Accra. The first is modal: the paradigmatic excluded subject is a person without access to a car in a society organised around cars, so the analytic problem is extending mobility to a disadvantaged minority. In Madina and Adenta, the disadvantaged are the modal majority, and the problem is not extending access to a system but the failure to provide the system most people already use. The second is institutional: the framework was elaborated in contexts where a comparatively capable state could be assumed to deliver, regulate and enforce, so that exclusion appears as a distributional failure within a functioning apparatus. Where mandates are fragmented across road agencies, municipal assemblies and police, and where enforcement is intermittent, exclusion is generated in the gaps between

institutions rather than by any single institution's allocation decisions. The third is material: infrastructure tends to be treated as a binary, present or absent. Where footways exist but are occupied, where footbridges are built but cannot be climbed, and where raised walkways deter vehicles by also deterring wheelchairs, presence and absence do not exhaust the analytic possibilities.

None of this invalidates the framework, and none of it corrects it. It specifies where the Accra case can extend, and it underpins the three propositions set out in the Introduction. Reading walkability through this lens shifts the analysis from cataloguing defects to the processes that generate them: how budgets are allocated, where mandates sit, and what is enforced.

Pedestrian death rates across sub-Saharan Africa provide the sharpest measure of what is at stake (Vissoci et al., 2017; World Health Organization, 2023), but injuries are only part of the problem. Exclusion also registers as anxiety, as trips postponed or abandoned, and as reliance on riskier alternatives. A blocked or flooded footway does not merely cause inconvenience; it removes options, and it removes them from people who had the fewest to begin with. Addressing these effects requires a vocabulary for the differentiated experience of movement, which is where mobilities scholarship on the uneven politics of movement is instructive (Sheller, 2018), and which the analysis below develops through accounts from elderly, pregnant, and disabled participants.

Universal Design and Its Tension with Social Exclusion Theory

If the Social Exclusion Theory explains how inequality is produced, Universal Design supplies criteria for judging the built environment against it. The principle is that environments should be usable by people of all ages and abilities without adaptation or specialist provision (Imrie & Hall, 2001). For pedestrian infrastructure, this means ramps, tactile paving, adequate width, even surfaces, visible crossings and footbridges that can be climbed. Infrastructure in rapidly urbanising African cities often falls short even where it exists. Footways and footbridges are built, then prove unusable for wheelchair users, punishing for older people, or unsafe for women late in pregnancy (Amoako et al., 2014; Prescott et al., 2020). The notion of exclusion here follows from how things were designed, not only from whether they were provided.

The relationship between the two frameworks is usually presented as complementary. It is more accurately described as productive tension, and the tension is analytically useful rather than a problem to be smoothed over. Three points of friction are relevant to this study.

First, the two frameworks operate at different registers. Social Exclusion Theory is relational and processual, concerned with how disadvantage is produced over time through the interaction of social position and institutional practice. Universal Design is normative and technical, specifying a standard that a given object either meets or fails to meet. A standard cannot explain its own non-fulfilment. The Universal Design can tell us that a footbridge without a compliant ramp gradient excludes wheelchair users; it cannot tell us why the gradient was specified that way, why no one is answerable for it, or why the failure recurs across projects. Conversely, Social Exclusion Theory can trace the institutional pathway but provides no independent criterion for what constitutes an adequate footway, leaving the analysis vulnerable to the charge that it describes dissatisfaction rather than injustice. Each framework supplies what the other lacks, and reading them together is defensible only if you make the difference in register explicit.

Second, compliance and inclusion can come apart in both directions. A technically compliant facility on a footway that is occupied daily and never enforced satisfies Universal Design while, in practice, excluding; this is the custodial gap of P1 stated in design terms. Equally, an informal accommodation that meets no standard at all, such as a levelled verge that residents maintain themselves, may deliver more usable access than a compliant structure. Assessing Universal Design as a property of objects at the moment of construction will systematically misread environments where usability depends on what happens to the object afterwards.

Third, the Universal Design's universalism sits uneasily with the differentiation required by a social exclusion analysis. The ideal of a single environment usable by everyone without adaptation presumes that needs converge on a common design solution. Participants in this study did not describe their needs that way. One participant with a disability in Madina put the point with unusual precision: "There are categories of disabilities that all

need different systems that will facilitate movement, but they are not taken into consideration when planning." The claim is not that design standards were poorly applied but that the design subject was specified wrongly at the outset, an argument about recognition rather than distribution or compliance (Fraser, 2009; Young, 1990). Universal Design, read as a checklist, cannot register this objection. Read as a claim about whose bodies count as the norm against which environments are built, it becomes an argument about recognitional justice, and we use it here in that form.

Enforcement and everyday practice erode design intentions in any case. Vendors occupy footways, drivers park across them, drain covers are stolen, and maintenance lapses (Obeng-Atuah et al., 2017; Okyere et al., 2024). Thus, provision alone guarantees nothing, and a framework that evaluates provision alone will miss most of what determines whether a street is walkable.

Spatial Justice as an Integrating Frame

Spatial justice provides the conceptual anchor that holds these two frameworks together and gives this paper's argument its adequacy criterion. The literature's core claim is that justice has a consequential geography: the spatial organisation of a city is not merely where injustice happens, but part of how it is produced and reproduced (Soja, 2010). Fainstein (2010) turns this towards planning practice, proposing equity, diversity and democracy as evaluative criteria for urban decisions, and insisting that the justice of a plan cannot be read off its stated objectives. Applied to pedestrian infrastructure, spatial justice shifts attention from whether a facility exists to what its existence, condition, and governance do to the life chances of the people whose routes depend on it.

We follow the now-standard tripartite specification of justice claims (Fraser, 2009; Young, 1990), developed in transport and mobility scholarship (Martens, 2017; Pereira et al., 2017; Sheller, 2018), and define each dimension for pedestrians.

Distributive justice concerns the allocation of accessibility across social groups and space: which corridors receive continuous footways, lighting, drainage and safe crossings, and which do not; how capital and maintenance budgets are apportioned between vehicular capacity and pedestrian provision; and how the resulting pattern maps onto the residential geography of low-income and vulnerable populations. Pereira et al. (2017) argue that the appropriate distributive currency in transport is accessibility rather than mobility or infrastructure spending, and Martens (2017) develops the case for a sufficiency threshold below which no group should fall. Both moves matter here, because they shift the evaluative question from how much was built to what people can reach.

Procedural justice concerns the processes through which those allocations are made and sustained: who sets priorities, who is consulted, who holds the mandate to build, who holds the mandate to enforce, and to whom any of them are answerable when a facility becomes unusable. This is the dimension that fragmented governance most directly implicates, and it is where P1 is located. Procedural injustice in this setting is less a matter of formal exclusion from consultation, though that occurs, than of a distribution of mandates in which no actor is accountable for the outcome that pedestrians actually experience.

Recognitional justice concerns whose needs, bodies, and knowledge are treated as legitimate in framing the problem. It asks which pedestrian is imagined when a footway is specified, whether disability is treated as a category requiring differentiated provision or as a residual to be accommodated later, and whether the situated expertise of people who walk these routes daily is admitted as evidence. This is the dimension P3 turns on directly, and it is the one most consistently absent from technical accounts of walkability.

The relationship between the distributive and recognitional dimensions requires particular care, because our argument depends on it and because the two are easily conflated. They are analytically distinct: a distributive claim concerns the allocation of accessibility and can be assessed by asking what a given group can reach; a recognitional claim concerns a group's standing as a claimant and can be assessed by asking whether its needs were included in the specification at all. But they are causally entangled, and the entanglement runs in both directions. Misrecognition generates maldistribution, since a mode or body not registered as a legitimate object of planning will not be

allocated resources through the appraisal categories that decide what is built. Maldistribution then entrenches misrecognition, since the resulting absence of provision is read as evidence of low demand, which confirms the original judgement that the group need not be planned for. The two dimensions are therefore neither reducible to one another nor independent, and the more useful formulation is that recognition has explanatory priority while distribution has experiential priority. What a participant encounters is the missing footway, not the categorial decision that produced it; what explains the missing footway is the decision.

This directly affects how our second proposition should be read. P2 holds that, in this setting, the causal centre of transport-related exclusion lies in the institutional non-recognition of walking rather than in individual resource deficit. It does not hold that exclusion here is recognitional rather than distributive, nor that distributive analysis is displaced. The pattern we document is distributive in form – corridors with and without continuous footways, budgets weighted towards vehicular capacity – and the claim concerns what generates that pattern and, therefore, what would be required to change it. P2 accordingly sits at the junction of the two dimensions rather than within the recognitional one, which is why it is developed in the distributive subsection of the analysis and returned to in the synthesis. The practical implication is the point of the distinction: a purely distributive remedy, more pedestrian infrastructure delivered through unchanged appraisal categories, would be expected to reproduce the same pattern in new locations, because the categories that made walking invisible would still be operating.

Distinguishing the three dimensions does more than tidy the vocabulary. It makes visible that interventions addressing one dimension can leave the others untouched, or worsen them. A capital programme that builds footbridges addresses distribution while entrenching recognitional injustice if the footbridge assumes a body capable of climbing. A participatory consultation that improves procedure changes nothing distributively if the budget line for pedestrian safety remains the residual claimant. Cobbinah and Finn (2024) make the case that pedestrian accessibility in African cities is properly read as

a question of spatial justice and progressive planning rather than as a neutral technical shortfall, and work on policy-reality gaps shows how far formal commitments to inclusion can sit from conditions on the street (Okyere et al., 2024; Tuffour et al., 2025). The analysis that follows is organised around these three dimensions, and each interrogates one of the propositions set out above.

Walkability and the Politics of Urban Transition

Urban transition debates foreground sustainability, resilience and inclusive growth; the projects that get built, however, tend to be large. Highways and interchanges are visible and politically rewarding in a way that a continuous footway is not (Amoako et al., 2014; Mitullah et al., 2017). This preference betrays an assumption that modernisation and vehicular movement amount to the same thing.

The assumption sits awkwardly beside the sustainability commitments cities now make. Walking is the lowest-carbon mode available, and the one most residents already use, and it remains institutionally undervalued. Inclusive walkability is therefore a governance question embedded in urban transition rather than a technical problem awaiting a design solution, and a spatial justice reading makes clear why: transitions are evaluated by what they deliver and to whom, not by the intentions declared for them. How vulnerable pedestrians actually experience these streets is the test of whether a transition is inclusive or simply reproduces old inequalities in new spatial forms.

Study Context and Methods

Urban Accra in Transition: The Case of Madina and Adenta

Accra's metropolitan area has expanded rapidly over the past two decades, resulting in mixed land uses, informal development, strained infrastructure, and uneven regulation (Cobbinah et al., 2018; Doan & Oduro, 2012). This pattern is familiar across sub-Saharan Africa, where population growth outpaces the capacity to plan for and service it (Wang & Kintrea, 2021).

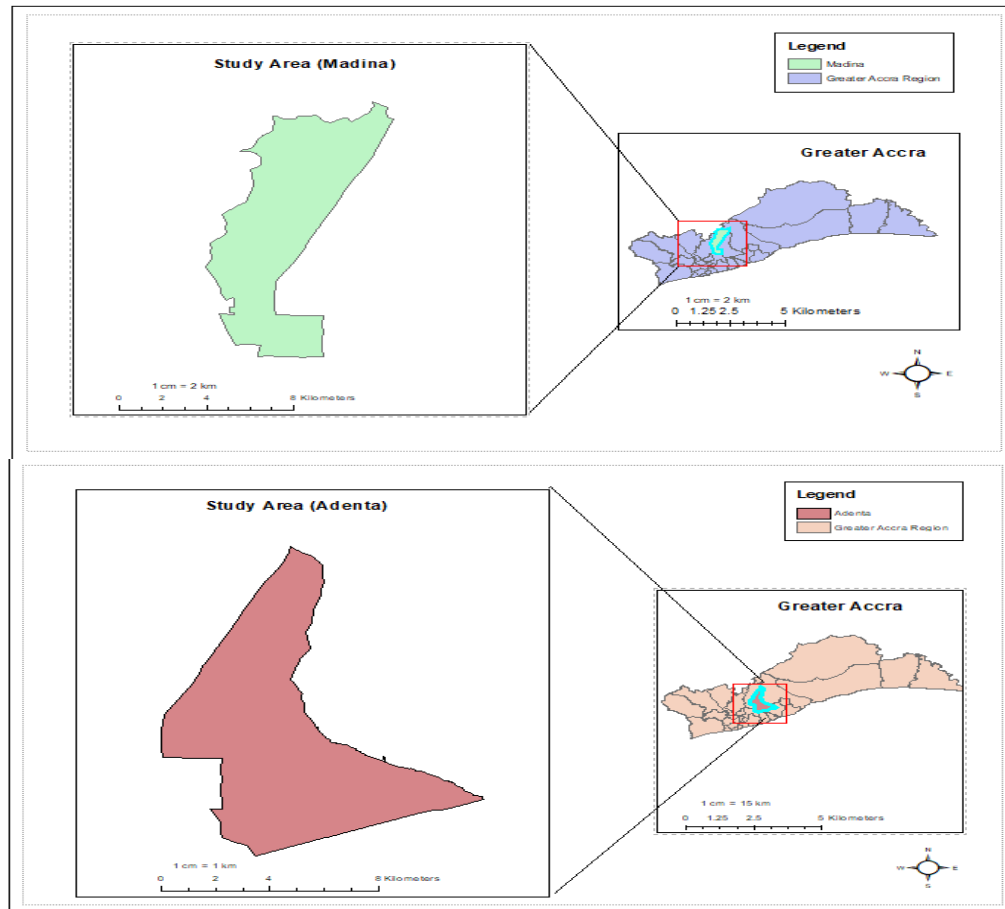


Fig. 1. Location of Madina and Adenta in the Greater Accra Region, Ghana.

Source: Authors' construction using ArcMap.

Madina and Adenta lie roughly 12–15 kilometres northeast of central Accra (Fig. 1). Both fall within the Greater Accra Metropolitan Area and have grown substantially, recording populations of approximately 222,853 and 237,546, respectively, in the 2021 Population and Housing Census (GSS, 2021). Madina is dense and commercial, with heavy pedestrian traffic, informal trading and transport interchanges. Adenta combines established residential neighbourhoods with newer peri-urban settlements (Poku-Boansi & Adarkwa, 2016).

Together, they capture Accra's shift from a planned core to a rapidly expanding periphery where there are servicing trails and settlements. Broken footways, open drains, encroachment and mixed traffic are ordinary features of both. This makes them useful sites for examining how inclusive walkability is negotiated under rapid growth, limited enforcement, and competing claims on land. Neither municipality is exceptional in this respect. Both reflect conditions common across growing African cities, which is what makes them analytically productive rather than statistically representative. The distinction governs how the following findings should be read. We make no claim to generalisation across Accra or Ghana, and conditions will differ in the central business district and in lower-density settlements. The claim is analytical: the mechanisms identified here are propositions about how pedestrian exclusion is produced under specified institutional conditions, and their applicability elsewhere is a matter for testing rather than assumption.

Research Design

This was a qualitative study. We wanted to understand how people experience walking, and questions about perceived safety, negotiated risk and the social texture of movement sit poorly within the categories used in transport policy analysis (Bryman, 2016; Creswell, 2007).

We conducted semi-structured interviews with 20 vulnerable residents across Madina and Adenta, as well as two municipal road officials, one from each municipality. The resident sample comprised six elderly residents aged 53 and above, ten pregnant women and four persons with disabilities. These groups were purposively selected because they face the most severe consequences of poor pedestrian infrastructure and rely more on walking than most (Palinkas et al., 2015).

The sample size followed the logic of saturation and information power rather than statistical representativeness. Guest, Bunce and Johnson (2006) found that thematic analysis of a relatively homogeneous group typically saturates by around twelve interviews. Hennink and Kaiser's (2022) review of empirical saturation tests placed the range at nine to seventeen for studies with a narrow aim and a specific population, while noting that heterogeneous samples and cross-cutting themes require more participants. This study spans several distinct groups across two municipalities and seeks patterns among them, placing it within the range identified by Hagaman and Wutich (2017) for multisited work, which requires 20 to 40 interviews to establish metathemes. The sample also carries high information power in the terms set out by Malterud, Siersma and Guassora (2016): a tightly framed aim, a specific sample, an explicit theoretical foundation and sustained dialogue with participants all reduce the number of interviews needed to support a robust analysis. We monitored coding throughout fieldwork, and no new codes emerged from the final interviews in any participant group. We note, however, that the four interviews with persons with disabilities fall below the threshold at which saturation could be claimed for that group considered in isolation, and we treat those accounts accordingly in the analysis below.

Interviews lasted between 25 and 40 minutes and took place wherever suited the participant: at home, at work, in markets and at the roadside. We asked about daily walking routines, how safe people felt, what obstructed them, the state of the infrastructure, and what happened when they raised complaints. All interviews were audio-recorded with consent and supported by field notes. The authors conducted the interviews in Twi, Ga, or English, depending on the respondent's preferred language. The authors then transcribed the Twi and Ga interviews in their respective languages and translated them into English.

Recruitment and Access

Participants were identified through purposive sampling, using a different point of contact for each group. Pregnant women were identified, approached and recruited as they left the Frafraha Health Centre in Adenta and the Madina Polyclinic (Kekele). Elderly residents were identified, approached and

recruited as they left the Madina and Adenta markets. Persons with disabilities were identified, approached and recruited through the Ghana Federation of Disability Organisations (GFD). The municipal officials were recruited separately and by a different route: the Adentan Municipal Assembly (AdMA) and the La Nkwantanang Madina Municipal Assembly (LaNMMA) each operate an Urban Roads department responsible for local infrastructure, transport, traffic flow and development projects within their municipalities, and both departments were approached institutionally, with one official nominated by each unit head. Of the twenty-five residents approached, twenty consented, a response rate of 80 per cent. Those who declined either perceived no immediate benefit for themselves or lacked time to take part in the interview. No resident who consented withdrew during or after the interview.

Recruiting through health facilities, market settings and a disability organisation carries a known risk of selection bias, since people reachable through these channels may be better connected, more mobile and more accustomed to voicing complaints than those who are not. We took two steps to limit its effect. Interviews were conducted at locations chosen by participants, including roadside and market settings, which brought in people not encountered through the initial points of contact. We then used field observation as an independent check to determine whether the conditions participants described were consistent with those recorded in the same corridors. A residual bias remains and bears on how the findings should be read: the sample over-represents those with sufficient mobility to be present in public space, so the pedestrians whose exclusion is most complete are the least likely to have been encountered. The account given by the elderly wheelchair user quoted below, who has withdrawn from the streets almost entirely, is the closest the study comes to that group, and we obtained it only because he was interviewed at his shopfront rather than on a route.

Positionality and Reflexivity

The research team is based at a university in Accra and conducted fieldwork in municipalities within the same metropolitan region. We were therefore neither wholly outsiders to the setting nor insiders to the participants' everyday experience, a position that Berger (2015) describes as carrying distinct advantages and blind spots. Shared urban context and language made access straightforward and made participants' references to specific corridors, junctions and institutions immediately legible. It also risked a familiarity that could normalise conditions a less habituated observer would register as remarkable, and we used systematic observation protocols and photographic documentation partly to correct that.

We disclosed our institutional affiliation at the outset of every interview, and it shaped the encounter in ways worth stating. Several participants appeared to read the research as a channel to authority. The extended complaint about the assembly quoted below, with its appeal that officials "should do their jobs", is plausibly addressed as much to an imagined municipal audience as to the interviewer, and we have interpreted such statements as claims made in a particular relational setting rather than as unmediated description. We were explicit at the outset that the study had no capacity to deliver infrastructure or influence allocation decisions, to avoid raising expectations, though we cannot assume the clarification was fully absorbed.

The asymmetry was different in the interviews with persons with disabilities, where a non-disabled research team asking about dependence, risk and bodily difficulty risks both over-claiming understanding and eliciting accounts framed for a non-disabled listener. We addressed this by holding interviews in settings participants chose, following participants' own vocabulary for their impairments and access needs rather than imposing categories, and by not pressing where participants declined to elaborate. The Ghana Federation of Disability Organisations (GFD) also screened the interview guide for suitability for the participants with disabilities.

The interviews with municipal officials involved a reversed asymmetry, in which participants held institutional authority and had reason to present their agencies favourably. We treat their accounts in the analysis as institutionally situated claims rather than as neutral reporting, and we say so explicitly where we use them.

Observational and Visual Data and Their Analytical Role

We conducted observations along main roads, through markets, and in residential areas in both municipalities, and structured them rather than leaving them incidental. Using a common protocol specified in advance of fieldwork, we recorded footway presence and continuity, effective usable width, surface condition, gradient and step-free access at transitions, crossing facilities and their signalisation, drainage condition and cover integrity, street lighting, the nature and persistence of encroachment, and the observed negotiation of shared space between pedestrians, motorcycles, tricycles and vehicles. Footbridges were recorded separately for gradient, length, step-free access and structural condition. Observations were conducted on 14 corridors across the two municipalities between January and April 2025, with each corridor visited at least twice, including once after dark and once during or immediately after rainfall. The authors documented conditions that recurred across sites.

Observational and visual material entered the analysis in three specified ways rather than serving as background colour. First, we transcribed and coded field notes within the same coding frame as the interview transcripts, so observed conditions and reported experiences were indexed against common categories such as encroachment, surface condition, crossing safety, and lighting. Second, we used the photographic record for corroboration: where participants reported a condition, we checked whether it was independently documented on the corridors in question, and Fig. 2 is included because footway encroachment by traders and parked vehicles was both widely reported and consistently observed. Third, and analytically most productive, we treated divergence between the two data sources as a finding rather than as error. Observation could establish that a facility was present and physically compliant with measures such as width or the existence of a crossing, while interviews showed it was unusable in practice because of occupation, gradient, or lack of enforcement. That systematic divergence between built form and lived usability is the empirical basis of the custodial gap (P1) and of infrastructural inversion (P3), and it is not recoverable from either data source alone.

We did not use photographs elicitively in interviews, and we did not conduct formal member checking of the visual material. The interpretive risks of researcher-generated imagery, particularly the tendency of photographs to read as self-evident rather than as constructed, are well documented (Rose, 2016), and we used the images to illustrate conditions established through triangulation rather than as standalone evidence

Data Analysis

The analysis followed the six phases set out by Braun and Clarke (2006). We transcribed recordings verbatim and read them repeatedly. Coding combined categories drawn from the research focus, such as accessibility, safety, and design, with codes that emerged from participants' own statements. We then grouped codes into themes covering everyday walking, physical and environmental barriers, governance constraints, and inclusion. We refined these by comparing transcripts until the categories held together internally and remained clearly distinct. One author performed the coding, with review by co-authors.

We then used the three dimensions of spatial justice set out above as a second-order analytical frame, retaining Social Exclusion Theory as the mechanism of production and Universal Design as the criteria for evaluation. Themes were mapped against the distributive, procedural and recognitional dimensions, which is the organisation the integrated findings and discussion section follow. Reading participant accounts, field observations and officials' interviews against one another allowed us to distinguish claims supported across data sources from those resting on a single account, and we mark that distinction explicitly in the text where it bears on the strength of an interpretation.

Ethical Considerations

Participation was voluntary and written informed consent was obtained from all participants prior to the interview. We took particular care with persons with disabilities to ensure the purpose was clear, the setting comfortable, and confidentiality assured. The Ghana Federation of Disability Organisations screened the interview guide for suitability before fieldwork began. All identifying details have been removed, and participants are described by group, gender and municipality only.

Quotations are reproduced verbatim throughout, including original grammar, spelling and orthography, and ellipses mark omitted words. Where an interview was conducted in Twi or Ga, the quotation is our translation from the transcript in the original language. No other alterations have been made, and we have not silently corrected non-standard forms, since doing so would edit participants' speech toward a register that was not theirs.

Walking at the Margins: Findings and Discussion

This section integrates the presentation of findings with their interpretation, organised around the three dimensions of spatial justice specified above. Each subsection presents the evidence, applies it to the analytical framework, and the final subsection synthesises the three propositions into an explicit statement of what the Accra case contributes to transport-related social exclusion theory. Where a claim rests on a single account, we say so, and we distinguish throughout between what participants reported, what we observed, and what we infer.

Distributive Injustice: Walking as Necessity in a Car-Centred System

Walking was how most participants got around Madina and Adenta: to markets, clinics, lorry stations and church. Almost no one described it as recreation. It was what transport costs and the location of services had left them with. A pregnant teacher in Madina explained: "I do not enjoy walking. If I am going to school, there are cars everywhere. There is no place to walk, so I must pass through them or by them." An elderly man described walking within congested traffic corridors in similar terms: "It is stressful because Madina is choked up, the road is small, there are so many cars around, so when walking, you must be careful, so a car does not come and hit you. Walking is not easy; there is always human traffic."

Both accounts describe the same distributive fact from inside a journey. The carriageway is allocated to vehicles; the pedestrian is allocated whatever remains, which in these corridors is a residual and discontinuous space. Participants described stepping into the carriageway because the footway simply ran out, sharing it with cars and motorcycles, and timing crossings around traffic that would not stop. Observations on the same corridors recorded discontinuous footways, sections where provision terminated without transition, and crossing points without signalisation or markings, consistent with these accounts.

Read distributively, the pattern is not a shortfall in infrastructure volume but a misallocation relative to use. Walking carries the daily traffic while the street is organised around vehicles, and the accessibility that pedestrian provision would deliver is precisely what is not being distributed (Martens, 2017; Pereira et al., 2017). This is where the phrase *car-centred planning* earns its analytical keep: it names not a preference for cars but a distributive rule in which pedestrian provision is the residual claimant on both space and budget. Walking persists in these municipalities not because it is supported but because the alternatives are closed off, and the pattern recurs across rapidly urbanising settings where investment follows road capacity and pedestrian provision arrives late or not at all (Amoako et al., 2014; Mitullah et al., 2017). This is also the first point at which existing formulations of transport-related social exclusion require extension beyond the settings for which they were developed. In the settings where the framework was developed, exclusion attaches to those outside the dominant motorised system, and the remedy is understood as extending access to it (Church et al., 2000; Lucas, 2012). Here the excluded are the modal majority, and no extension of car access is either plausible or desirable as a remedy. Distributive analysis shows that the system serving most journeys receives the least provision, a different causal structure from the substance of P2. That people keep walking under these conditions also exposes a contradiction at the centre of the sustainability agenda: active mobility is promoted globally as a climate strategy, yet in cities where it is already universal it remains unsupported and dangerous. Urban transition does not deliver inclusive mobility on its own.

Recognitional Injustice: Infrastructure Built for a Body That Does Not Walk Here

Where infrastructure existed, participants described it as obstructed, poorly maintained or unusable. Footways were discontinuous and uneven, blocked by traders' goods and parked vehicles (Fig. 2), and used as carriageways by motorcyclists and tricycle operators. A trader in Adenta described the

resulting confusion of function: “No, cars don’t, but tricycles rather use the sidewalks ... I feel uncomfortable, since these sidewalks were purposely constructed for pedestrians ... It is not a good sight to behold, and I have personally lamented about it because it isn’t safe at all having to witness traders, pedestrians and motorcyclists use the sidewalks.” A pregnant woman

in Madina made the design point directly: “The modifications we desire could help enhance and reorient people on the purpose of the sidewalks, which is just for the pedestrians, not the motorcyclists or tricycles.” Her observation that the footway “looks like a road, just like the main road” is a design critique rather than a complaint about behaviour.



Fig. 2. Footways in Madina and Adenta encroached by traders and parked vehicles.
Source: Fieldwork, Madina and Adenta, 2025.

Participants with disabilities locate the problem earlier in the process, at the point where the design subject is specified. The participant quoted in the framework section above put it in terms that anticipate the analytical claim: “There are categories of disabilities that all need different systems that will facilitate movement, but they are not taken into consideration when planning. Most drains around are open, and those that are closed have holes in them or are made of metal, so those using crutches, a white cane, or a wheelchair cannot pass through them. In instances where there are no sidewalks,” I manage to pass along the side of the road, which is not safe. Three things are compressed into that statement, and each is analytically distinct. The first is a claim about differentiation: crutch users, cane users and wheelchair users have divergent and sometimes incompatible requirements, so a single undifferentiated provision cannot serve them all. The second is a claim about the point of failure: the omission occurs at the planning stage, not at construction or maintenance, which means it cannot be remedied by improved delivery of the same specifications. The third describes the adaptation that follows: walking in the carriageway, where the individual absorbs as personal risk what the planning system declined to accommodate.

A man with a disability in Adenta, a fifteen-year resident who walks with difficulty and still uses the streets daily, described the same pattern at a footbridge: “But the footbridge could have been modified. It’s too complicated and exaggerated in its structure. But we can’t complain, that’s what has been constructed for us.” Asked later in the same interview whether wheelchair users could use the structure, he answered: “The base of the footbridge has been washed away by the rains so in the case of a disabled person using a wheelchair, he or she needs an aid with being pushed to bypass the loophole created.”

The closing clause of the first extract registers something beyond dissatisfaction with a structure. It is an account of standing: of being positioned as the recipient of provision rather than a party to decisions about it, and of understanding complaint to be futile because no channel exists through which it would be heard. That is a recognitional injustice in the sense specified above, and it is also a procedural one, since the absence of a channel for complaint is an institutional arrangement rather than an attitude (Fraser, 2009; Young, 1990).

The second extract supplies the accessibility consequence that follows: a facility built to remove a hazard is passable for a wheelchair user only with another person’s labour, so the structure does not fail outright but converts independent movement into assisted movement. No measure of provision captures that conversion, and it is the everyday form infrastructural inversion takes.

Corroboration of the claim about the complaint is available and takes an instructive form. No participant with a disability reported making a complaint to a road agency or assembly and receiving a response. Instead, they described no occasion when the question would arise. Asked whether planners or officials consult residents about road and pedestrian conditions, an elderly wheelchair user in Adenta replied: “Well, nothing of that sort is done, but the Assembly sometimes organises clean-up exercises, but the Member of Parliament hardly comes around.” Asked separately about street lighting, the same participant reported a failure that had simply gone unanswered: “No, we don’t. Recently, the few streetlights that brightened the street went off, and nothing has been done about it by the Assembly.” The first man’s judgement that “we can’t complain” is therefore corroborated not by a second account of a complaint refused but by the more telling fact that no such account exists in the data. Where a channel is understood to be unavailable, the attempt is not made, and the institutional side can then read the absence of complaint as an absence of demand. This is one mechanism by which the custodial gap sustains itself, and we return to it in the following subsection.

The most complete evidence of the accessibility consequence comes from the same elderly wheelchair user and takes the form of a refusal to answer the question rather than an answer. He described a mobility now confined to two modes: “I can only move around in my wheelchair aside that I am mostly confined to a chair,” and, of the streets themselves, “For some years now, I haven’t used the road myself since I use cars to move around or my wheelchair.” Asked directly whether the roads work for persons with disabilities, he could not say: “Well, as one who is disabled, I hardly see that, so I may not have the answer because I am immobile except when aided.”

We take this last answer to be the most significant single statement in the dataset, and it is significant precisely because it contains no complaint. A

participant selected for the study on the grounds that he depends on the pedestrian environment reports that the question of its adequacy no longer applies to him, because he has ceased to use it. Withdrawal has gone far enough to remove him from the population whose experience the question was designed to elicit. This is exclusion at its terminus, and it exposes a limitation in how pedestrian conditions are ordinarily assessed: an environment that has already driven people off the street will register as adequate to those who remain on it, because those it excluded most completely are no longer available to report on it. The two participants with disabilities quoted here occupy different points on the same trajectory. The first still uses the streets and finds them punishing; the second no longer uses them at all. Design that specifies the wrong subject does not produce a single condition called inaccessibility. It produces a spectrum running from difficult access to assisted access to no access, and movement along that spectrum is one-directional.

Elderly participants and pregnant women described the same facilities in terms of physical cost rather than standing. An elderly trader in Adenta said of the footbridge, “Though I use it, I feel scared because I feel it is too high,” and one elderly woman reported that she now avoids going out on days when the journey would require climbing it. One pregnant participant described being knocked down by a motorcycle while crossing, after cars had already stopped for her, an incident that captures how a facility can be safe with respect to the hazard it was designed for and unsafe with respect to the one it was not.

Read against Universal Design, these accounts show provision failing on almost every criterion the framework specifies: missing ramps, absent tactile paving, inadequate effective width, uneven surfaces, unenforced crossings, and footbridges whose gradient and length defeat the users they were intended to protect. But the more consequential finding is one that Universal Design assessed as a compliance checklist would not capture. Some features actively worsened conditions for the most vulnerable users. Raised walkways intended to keep vehicles off the footway created a fresh barrier for wheelchair users and older pedestrians; footbridges built to separate pedestrians from traffic removed a hazard for those who could climb them while imposing exclusion, or a return to the carriageway, on those who could not.

We name this pattern infrastructural inversion: an intervention that reduces aggregate risk while redistributing residual risk onto the users least able to absorb it (P3). The mechanism is neither neglect nor implementation failure. It follows from specifying the design subject as an unimpaired, unencumbered adult pedestrian, and it produces facilities that perform well on aggregate measures while performing worst for the groups whose exclusion is most severe. Existing formulations of transport-related social exclusion treat infrastructure as present or absent (Church et al., 2000; Lucas, 2012); infrastructural inversion identifies a third state, present and exclusionary by design, in which provision is the vector of exclusion rather than its remedy. Exclusion in these municipalities stemmed as much from what had been built as from what was lacking.

Procedural Injustice: Fragmented Mandates and the Custodial Gap

Interviews with municipal road officials locate these conditions in the institutions that produce them. These are two accounts from officials with professional and institutional stakes in how their agencies are perceived, and we read them as situated claims rather than neutral description. What makes them analytically valuable is less the account’s sincerity than the institutional structure it describes, corroborated by residents’ reasoning from the opposite direction.

Funding was described as a permanent constraint, with safety the marginal item: “Funding, you know there is a national cake that must be shared to everybody, but many times when it comes to sharing, safety is the first they cut out. Largely because we have not come to pace with safety, we do it, but it is not like the developed countries.” The official’s account suggests that pedestrian safety may be systematically deprioritised in fiscal decision-making rather than underfunded in a particular cycle, and the structural reading is consistent with what participants described on the street and with what we observed. We are careful about the strength of this claim. It rests on a single interview in a study that did not examine municipal budgets, project appraisal documents or expenditure records, and one official’s characterisation of allocation practice cannot establish a pattern across budget cycles, municipalities or infrastructure types.

What can be said is that the account is congruent with the wider evidence: with the documented pattern of accessibility planning being absent by design from Ghanaian medium-term development plans (Tuffour et al., 2025), with the gap between formal commitments and street-level conditions in Accra (Okyere et al., 2024), and with the distributive pattern described in the preceding subsection. Establishing the claim properly would require analysis of municipal budget allocations and project appraisals across several cycles, which we identify as a priority for further research.

The second constraint was enforcement, and here the evidence is stronger because it converges from three directions. Officials described encroachment by traders, unauthorised parking, and motorcycles on pedestrian facilities as routine; residents in both municipalities reported them independently; and observations on every corridor documented them. The official's account of where responsibility lies is the analytically decisive statement: "Our job description does not cover enforcement. We do the infrastructure; the assemblies and police are the ones who must enforce." Residents arrived at the same conclusion from the opposite direction. One participant from Madina was explicit about the remedy and about who owes it: "If the assembly endeavours to regulate the people as well as position law enforcement personnel in vantage places, then this behaviour will be a thing of the past ... The Assembly should do their jobs and reiterate the purpose of the footbridge and deal with those who are at fault ... They should educate the people, enforce the law and not just take tokens in the guise of ticketing to condone the misbehaviour." The final clause is worth attention, since it describes not an absence of enforcement but its conversion into a revenue practice that leaves the underlying conduct in place, which is a more specific and more damaging claim than under-capacity.

Officials also pointed to stolen drain covers and resistance during land acquisition. Both describe the same structural position: an agency responsible for delivering an asset it has no mandate to protect, in a space over which its claim is contested. Neither is a marginal operational difficulty. A stolen drain cover turns a completed facility into a hazard concentrated on the users least able to detect or avoid it, and contested acquisition determines where pedestrian provision can be routed at all, making both distributive outcomes products of procedural failure.

This is the evidential basis of P1. Road agencies are mandated to construct pedestrian facilities; municipal assemblies and the police are mandated to keep them usable, but none of them has a mandate for the outcome: whether a person can actually walk the corridor. The consequence is a custodial gap: an interval between provision and enforcement in which built infrastructure reliably degrades into a form of exclusion, with no institution answerable for the degradation because each has discharged its own mandate. The gap is not a coordination failure in the ordinary sense, which implies actors who share an objective and fail to align. It is a structural feature of how mandates are divided, reproduced precisely because each agency can point to a completed remit.

The theoretical implication is that pedestrian infrastructure cannot be theorised as a stock. Transport-related social exclusion scholarship has largely treated infrastructure as an asset whose distribution is the object of analysis (Church et al., 2000; Lucas, 2012, 2019). The Accra case shows that in institutional environments of this kind, usability is a flow requiring continuous custodianship, and that the distribution of custodial responsibility is analytically prior to the distribution of the asset. A footway is not a thing a municipality has; it is a condition a municipality sustains or fails to sustain. This is the policy-reality gap that Tuffour et al. (2025) identify in Ghanaian planning, observed at the scale of a single footway and given an institutional mechanism.

Inclusive mobility cannot be achieved through construction alone, and transitions organised around large projects without matching institutional coordination will reproduce existing inequalities in new forms. A city can hold genuinely inclusive ambitions while its routine practices work steadily against them, and neither the ambition nor the practice need be insincere for the outcome to be unjust.

The Compounding of Injustice: Negotiating Risk in Everyday Movement

For these participants, walking meant continuously calculating physical, social, and environmental risks, and these calculations interacted. Women in Madina described fear of unlit streets: "Most of the streetlights are not working, so it is scary to walk at night. There are a lot of dangerous people around, so I try to

walk as fast as I can." Women in Adenta described the same problem with its seasonal dimension: "There are also thieves in the neighbourhood due to the dark paths created by the absence of streetlights ... The rainy seasons aid the robbers' operation since the muddy paths with no light create an atmosphere of quietness for them to hide ... and pounce on residents." A pregnant trader in Adenta who often walks home after dark had experienced the consequence directly: "I have been attacked twice by robbers and heard of several stories from others ... The safe places to walk are those areas with erected streetlights." These accounts show why the categories of exclusion identified in the founding literature cannot be treated as separable in this setting. Church et al. (2000) analytically distinguish physical, temporal, and fear-based exclusion. Here, a single walk home compounds them: the absent lighting is a distributive failure, the resulting fear is a temporal constraint that removes the evening from the range of usable hours, and the response of walking as fast as possible transfers the risk onto a body for which speed is precisely what is unavailable. For the pregnant trader, the physical demand of hurrying, the fear-based restriction of route and hour, and the material fact of having been attacked twice are one condition rather than three.

The weather intensified all of this. During the rainy season, flooding and mud made inner roads impassable, pushing pedestrians into traffic or keeping them at home altogether: "Every time it rains, the road is flooded, so I cannot walk outside." The same rainfall that floods the carriageway also, as the participant with a disability described earlier, erodes the base of the footbridge, so that a single seasonal event removes the alternative at the same moment it removes the primary route.

Elderly participants spoke of exhaustion and of staying at home; pregnant women pointed to uneven surfaces and to motorcycles moving unpredictably around them; participants with disabilities described something beyond the physical, namely the insecurity and enforced dependence on others that follow when infrastructure assumes a body other than one's own. The consequences extend well beyond discomfort. Participants missed appointments, arrived late to work, and abandoned trips they needed to take; one elderly participant recalled missing a medical appointment because of conditions along the route. That report deserves emphasis, because it is where the analysis meets the currency that transport justice scholarship argues should be decisive. What was lost was not mobility but accessibility: a health service that formally existed yet, for that person on that day, was unreachable (Martens, 2017; Pereira et al., 2017).

Exclusion in these municipalities therefore operates at several scales simultaneously, from the gradient of a ramp to the allocation of a municipal budget, and the scales are connected rather than merely coincident. A budget decision that treats safety as the marginal item produces an unlit street; an unlit street produces a fear-based restriction on the hours a woman can move; that restriction produces a foreshortened working day for a trader who depends on evening custom. The accumulation is not additive across a population but concentrated on particular people, which is what makes it an injustice rather than an inefficiency.

What the Accra Case Contributes to Transport-Related Social Exclusion Theory

The three propositions set out in the Introduction can now be assessed against the evidence, and their relationship to existing formulations stated precisely. We assess them in the order the analysis established them, not the order in which they were introduced, and indicate for each how strongly the data available to this study support it.

P2, majority-mode exclusion, is supported by the distributive analysis and is best described as a reordering of explanatory priority rather than a replacement of one mechanism with another. As formulated by Church et al. (2000) and consolidated by Lucas (2012, 2019), transport-related social exclusion takes as its paradigmatic subject a person without access to a dominant motorised system and locates the causal mechanism in a household-level resource deficit. That mechanism is not absent in Madina and Adenta; fares are unaffordable for many of our participants, and household constraints are real. The case shows that it is not the operative one. The excluded here travel by the mode that carries most journeys, and no plausible remedy involves extending access to cars, so the question that determines outcomes is why the majority mode receives the

least provision. Our answer is institutional non-recognition: walking is not planned for because it is not registered as transport within the categories that structure appraisal and allocation. This is a recognitional claim in the sense specified by Fraser (2009) and Young (1990). We should be precise about its scope. We do not claim that exclusion here is recognitional rather than distributive, and the outcome we document is plainly distributive in form. We claim that the distributive pattern is generated recognitionally, which is why a purely distributive remedy, more pedestrian infrastructure delivered through unchanged appraisal categories, would be insufficient on its own. It also explains why the sustainability framing has produced so little change in practice: a mode can be celebrated in policy language while remaining invisible in the categories that decide what gets built.

P1, the custodial gap, is supported by the procedural analysis and is the paper's most transferable claim. The proposition holds that when the mandate to build is institutionally separated from the mandate to sustain, exclusion is produced in the interval between them, and neither mandate-holder is accountable for the outcome pedestrians experience. This requires infrastructure to be theorised as a flow rather than a stock, and it identifies an object of analysis, the distribution of custodial responsibility, that is prior to the distribution of assets. The claim is not that fragmented mandates are unique to Ghana; they plainly are not. It is that in institutional environments where enforcement capacity is thin, and encroachment pressure on public space is high, the custodial gap becomes a leading mechanism of pedestrian exclusion alongside the non-provision that existing formulations foreground, and on the corridors we studied it accounted for more of what participants encountered than non-provision did. Whether it is generally dominant in such settings is a question this study cannot settle from two municipalities, and we frame it as a proposition to test rather than a finding. This is a mechanism, not a context, and it is testable elsewhere.

P3, infrastructural inversion, is supported by the recognitional analysis and by the divergence between our observational and interview data. Where a facility can be observed as present and specification-compliant while being reported as unusable, and where the intervention's protective logic is what generates the exclusion, the binary of provision and non-provision fails to describe the situation. Raised walkways that deter vehicles by also deterring wheelchairs, and footbridges that protect those who can climb by returning those who cannot to the carriageway, are not implementation failures. They are the predictable output of specifying the design subject as an unimpaired adult, and they compound the burden on the same bodies that the other two mechanisms already impose.

Taken together, the three propositions specify what the phrase pedestrian infrastructure as a material expression of structural inequality means in mechanical terms, and they carry the analysis from institutional abstraction down to the surfaces people actually cross. Pedestrian marginalisation in these municipalities is what the system produces, not an accident occurring within it, and the value of the case lies in identifying the mechanisms through which it occurs.

Two further implications follow from the frameworks we have used. Universal Design is more useful in this setting when treated as a claim about recognition, about whose body is specified as the design subject, than when applied as a compliance checklist, since compliance and usability come apart systematically wherever the custodial gap operates. And spatial justice earns its place in the analysis not as a normative gloss but as the frame that renders the three mechanisms legible as a single phenomenon. Distributive misallocation relative to modal share, procedural fragmentation of custodial responsibility and recognitional misspecification of the design subject are three faces of a single failure: the failure to treat pedestrians as full claimants on urban space (Cobbinah & Finn, 2024; Fainstein, 2010; Soja, 2010).

Implications for Inclusive Urban Transition

Inclusive walkability belongs to the centre of an equitable urban transition rather than at the edge of transport policy. In cities such as Accra, walking underwrites daily life while institutional frameworks continue to fund and regulate vehicles. Correcting this means reorienting urban agendas towards accessibility outcomes rather than infrastructure outputs. The recommendations below follow from the three mechanisms identified above rather than from the

general observation that conditions are poor, and each targets a specific dimension of spatial justice.

First, addressing the distributive dimension, commitment to non-motorised transport must be reflected in budgets and appraisal systems. The evidence indicates that allocation decisions protect safety poorly. Building pedestrian accessibility and safety indicators into project evaluation, through accessibility scoring against a defined sufficiency threshold and through safety benchmarks that cannot be waived, would make walkability harder to trade away when money is tight and would tie infrastructure spending to the sustainability and inclusion goals cities already profess (Martens, 2017; Pereira et al., 2017).

Second, and directly addressing the custodial gap, coordination is as important as construction. The problem identified here is not that agencies coordinate badly but that no agency holds a mandate for usability. The remedy is therefore not an exhortation to cooperate but the assignment of custodial responsibility: a named, accountable body for the ongoing usability of each pedestrian corridor, with maintenance and enforcement obligations attached to the asset at the point of commissioning rather than being treated as a separate administrative function. Enforcement capacity should be planned and budgeted as part of the mobility strategy, with defined working relationships among road agencies, municipal assemblies, and local police, and a channel to report and trace facility failures to a responsible party.

Third, and addressing recognition, the Universal Design requires regulatory force and correct specification of the design subject. Provision does not guarantee inclusion; design must anticipate the range of people who will use it, and, as one participant put it, must recognise that different impairments require different provisions rather than a single accommodation. Enforceable accessibility standards for footways, crossings, footbridges, and drainage, written into building codes and verified during implementation rather than only at the design stage, would make that anticipation routine. Appraisal should also explicitly test for infrastructural inversion, asking whether every proposed pedestrian intervention improves conditions for the least-advantaged user or merely for the average one.

Fourth, planning should draw on the people who navigate these streets daily. The accounts gathered here show detailed knowledge of where risks lie and how to mitigate them. Formal mechanisms for community input, designed to reach vulnerable groups rather than to be open to them in principle, would align interventions with on-the-ground conditions and strengthen the legitimacy of the process. The participant who said "we can't complain, that's what has been constructed for us" was describing the absence of such a mechanism as much as the inadequacy of a structure.

Finally, framing walkability as spatial justice clarifies what is at stake. Global narratives emphasise low-carbon mobility and climate resilience, but transitions that overlook pedestrian vulnerability will reproduce socio-spatial inequality under a green banner. Where walking is already the norm, improving conditions for it is simultaneously redistributive and environmental, and the two objectives need not be traded off.

Directions for Further Research

The three propositions advanced here are offered as mechanisms for testing rather than as settled findings, and each implies a specific line of work. Analysis of municipal composite budgets, medium-term development plans and project appraisal documents across several cycles would establish whether pedestrian safety is systematically deprioritised in allocation, which the present study can suggest but not demonstrate. Comparative multi-city research, particularly across cities with differing distributions of custodial responsibility, would test whether the custodial gap operates as proposed and whether it is as transferable as we argue. Mixed-methods designs combining interviews with spatial analysis of pedestrian network continuity would allow the divergence between built provision and lived usability, which is the empirical basis of infrastructural inversion, to be measured rather than inferred. Longitudinal work following a facility from commissioning through degradation would observe the custodial gap directly rather than reconstructing it from its effects.

Two extensions of scope would also be productive. Interviews with national policymakers, road agency engineers, and private-sector actors would allow the custodial gap to be traced upward from the corridor to the statutory instruments that divide the mandates, where any durable remedy would have to operate. And

research designed to reach pedestrians who have withdrawn from the street altogether, rather than those encountered on it, would test the account of terminal exclusion that the wheelchair user's testimony opens up here. That group is the most difficult to access through conventional sampling methods and remains the population for which the available evidence is weakest.

Conclusion

This study examined inclusive walkability in Madina and Adenta, two fast-urbanising municipalities in Accra. Walking remains central to everyday mobility in both, yet is structurally marginal to the planning and governance systems that shape their transitions. Elderly residents, pregnant women and persons with disabilities encounter that marginality most directly, through unsafe crossings, inaccessible design, environmental hazards and enforcement that does not arrive.

Reading the evidence through spatial justice, with Social Exclusion Theory explaining how disadvantage is produced and Universal Design supplying criteria for evaluating the built environment against it, we have treated pedestrian infrastructure as a material and institutional site where inequality is reproduced. The contribution is specified rather than asserted. The Accra case specifies three mechanisms that existing formulations of transport-related social exclusion have not so far been developed to name. The custodial gap, between the mandate to build and the mandate to sustain, requires infrastructure to be theorised as a flow rather than a stock. Majority-mode exclusion reorders explanatory priority towards institutional non-recognition without displacing the household resource constraint. Infrastructural inversion describes provision that excludes by specifying the wrong design. Exclusion works through funding priorities, divided mandates, and inconsistent enforcement, as much as through infrastructure that was never built; construction without institutional reform does not produce inclusive outcomes.

Three points follow for urban transition scholarship. Mobility transformation should be judged by accessibility and safety outcomes for vulnerable populations, not by infrastructure delivered. Pedestrian infrastructure is a tangible expression of structural inequality in rapidly urbanising contexts, and the mechanisms that make it so are specifiable and therefore addressable. And inclusive transition depends on governance reform, on the explicit assignment of custodial responsibility, and on a deliberate decision to treat pedestrian safety as a protected rather than a residual claim.

As African cities continue to expand, the challenge is not merely to build more, but to ensure that the resulting infrastructure distributes accessibility equitably,

remains functional and well maintained, and accommodates the diverse needs of all who depend on it. Without such an inclusive approach, the residents examined in this study will remain confined to the margins of the very cities they help to shape.

Declarations

Declaration of interest statement

The authors declare no competing financial or personal interests that could have influenced the work reported in this paper.

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Ethical approval

Participation was voluntary and written informed consent was obtained from all participants prior to interview. All identifying details have been anonymised.

Author contributions

JVG: conceptualisation, methodology, data collection, formal analysis, writing – original draft. IKA: supervision, methodology, validation, writing – review and editing. EN: methodology, validation, writing – critical review and editing. All authors read and approved the final manuscript.

Data availability statement

The interview transcripts generated and analysed during this study are not publicly available in order to protect participant confidentiality, but anonymised extracts are available from the corresponding author upon reasonable request.

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Originality statement

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