

BETWEEN TOURISM AND LIVELIHOODS: EVALUATING MOBILITY JUSTICE IN THE URBAN FABRIC OF FORT KOCHI AND MATTANCHERRY

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ABSTRACT

Urban mobility plays a critical role in shaping equitable access to opportunities, services, and public spaces. In the historic neighborhoods of Fort Kochi and Mattancherry, mobility intersects with dense cultural layers, tourism pressures, and longstanding socio-economic disparities. This study explores how everyday movement patterns, transport choices, and infrastructural conditions influence social justice in these precincts. Findings highlight gaps in last-mile connectivity, limited pedestrian-friendly networks, uneven access to water-based and public transport, and conflicts between tourist-oriented mobility and the basic mobility needs of local communities. Vulnerable groups—women, elderly residents, informal workers, and low-income households—experience disproportionate challenges in navigating these environments. Through spatial mapping and field observations, the study underscores the need for mobility planning that prioritizes equity, cultural sensitivity, and community participation. The research proposes context-specific strategies to enhance accessibility and reinforce socially just mobility systems in historic urban areas.

KEYWORDS: Urban mobility, social justice, accessibility, heritage precincts, equity, inclusive transport.

INTRODUCTION

Urban mobility is a key dimension of social equity, shaping access to employment, education, healthcare, and public space (Sheller, 2018). In cities with historic morphologies, mobility is closely intertwined with heritage constraints, spatial form, and cultural practices. Fort Kochi and Mattancherry, located along India's west coast, present a critical context where everyday mobility intersects with intense tourism activity. Although the precinct's cultural identity attracts significant tourist flows, mobility infrastructure largely prioritizes visitor-oriented routes and commodified experiences, often at the expense of residents' everyday movement needs. Communities dependent on walking and water-based transport navigate narrow streets, limited infrastructure, and safety challenges, resulting in uneven access between tourists and local users. This study applies a mobility justice framework to examine these spatial inequities, emphasizing fairness in access, safety, affordability, and dignity (Martens, 2017). It seeks to identify inequitable mobility outcomes in Fort Kochi and Mattancherry and proposes community-centered strategies that balance heritage conservation with everyday livelihood mobility. Figures 1–2 referenced later in Section 3 & 5

LITERATURE REVIEW

Mobility research has evolved from a focus on transport efficiency—speed, capacity, and infrastructure—to a broader concern with social equity and justice (Hanson, 2010; Sheller, 2018). Contemporary scholarship emphasizes that mobility is not value-neutral but closely linked to rights, inclusion, and dignity. Within this shift, mobility justice has emerged as a framework that connects

accessibility to broader socio-political fairness and distributive equity (Martens, 2017).

• Mobility Justice and Access

Mobility justice argues that urban inequity arises not only from inadequate transport provision but from structural conditions that systematically disadvantage certain social groups.



Figure 1: Map of Fort Kochi–Mattancherry (context map) Source: Author (2025)

Marginalization occurs when individuals are required to travel longer distances, face affordability or safety constraints, or are excluded from decision-making processes shaping mobility systems. These conditions reflect power relations embedded within urban space, where access, visibility, and infrastructural investment are unevenly distributed. Such spatialized inequities restrict participation in everyday urban life and reinforce broader patterns of social exclusion, particularly for vulnerable populations (Martens, 2017; Sheller, 2018; Law).



Figure 2: Key mobility network layers (streets + ferries + bus stops) Source: Author (2025)

The figure depicts the layered street network of Fort Kochi–Mattancherry. The figure shows street hierarchy, land use, and waterfront mobility in Fort Kochi–Mattancherry.

• **Heritage Precinct Mobility Challenges**



The flow chart illustrates how heritage-driven urban form and tourism pressure in historic precincts generate competing street demands, resulting in congestion, conflict, and mobility inequities. Historic urban neighborhoods are typically characterized by narrow streets, irregular pedestrian networks, and stringent heritage conservation regulations that limit modification of mobility infrastructure. These spatial constraints are

intensified by increased tourist footfall, which heightens competition for public space and reshapes movement priorities. In many heritage contexts, including Indian historic precincts, mobility investments consequently prioritize tourist-oriented infrastructure aligned with economic visibility and place branding (Zukin, 2010).

• **Tourism, Public Space & Inequality**

Tourism increasingly transforms public assets into commodified experiences, often constraining everyday local practices (Richards, 2020). In historic port precincts such as Fort Kochi and Mattancherry, seasonal tourism intensifies mobility demand, leading to congestion, rising transport costs, and competition for limited mobility resources. These pressures disproportionately affect residents who depend on affordable and non-motorized travel, reinforcing structural inequalities in access and movement (Zukin, 2010; Sheller, 2018).

• **Vulnerable Groups and Gendered Mobility**

Women, elderly individuals, and low-income communities experience layered mobility barriers related to poor lighting, safety concerns, and inaccessible pedestrian environments. These constraints limit independent movement and reduce access to employment, education, and social participation, reinforcing gendered and socio-economic patterns of exclusion (Uteng & Turner, 2019; Sheller, 2018). These vulnerabilities are examined empirically in Section 5, where Table 2 links observed conditions to field-based evidence from Fort Kochi and Mattancherry.

• **Summary of Knowledge Gaps**

Existing scholarship on historic urban areas largely examines heritage conservation and tourism-related mobility in isolation. Limited attention has been given to mobility justice as an integrative framework, particularly in Indian heritage precincts where everyday movement is shaped by complex socio-cultural dynamics and water-based transport remains central to local livelihoods. This gap forms the basis of the present research, which evaluates mobility through an equity-oriented lens in Fort Kochi and Mattancherry.

STUDY AREA PROFILE

Fort Kochi and Mattancherry, located within Kochi city in Kerala, are historic maritime precincts shaped by Portuguese, Dutch, and British colonial influences layered with indigenous cultural identities. They function as living heritage landscapes where tourism, fishing, trade, religious practices, and community life coexist within dense and irregular urban patterns.

• **Urban Morphology & Heritage Landscape**

The street fabric of the precinct is characterized by narrow, pedestrian-dominated lanes and an organic urban form shaped by its historical role as a port settlement. These features are closely linked to mixed-use waterfront neighborhoods that directly engage with the Arabian Sea, supporting fishing, trade, tourism, and residential life. The

built environment includes colonial-era bungalows, go downs, and synagogues alongside traditional terraced houses and coastal working-class clusters. In recent years, adaptive reuse of heritage structures into cafés, galleries, and boutique hotels has increased economic activity and pedestrian intensity, reshaping street use and influencing mobility patterns within the heritage precinct.

Street Network Hierarchy

Fort Kochi and Mattancherry exhibit an organically evolved street system shaped by Portuguese, Dutch, and British planning influences. The network comprises narrow, irregular, and human-scaled streets forming compact, walkable blocks. Primary roads such as KB Jacob Road, Calvathy Road, Bazaar Road, and River Road function as main movement corridors supporting higher traffic volumes. Secondary streets, including Princess Street, Napier Street, Rose Street, and Peter Celli Street, accommodate mixed pedestrian and vehicular activity and link commercial and residential areas. Tertiary residential



lanes such as Jews Street, Lilly Street, Ridsdale Road, and smaller neighbourhood connectors primarily serve local access and daily internal movement. Streets oriented toward harbour and market areas exhibit higher economic and cultural activity, while inland streets largely support residential and mixed-use functions, reflecting a clear spatial differentiation in mobility intensity.

Figure 3: Base Map – Fort Kochi & Mattancherry
Source: Author (2025), Base map of Fort Kochi–Mattancherry showing built fabric and street network for mobility analysis.

• **Demographic and Livelihood Dynamics**

Local communities include fishing households, informal hawkers and handicraft sellers, port laborers, small Figure retailers, and cultural workers whose livelihoods depend on public spaces and the waterfront economy.



Figure 4: Morphology , Source: Author (2025). The figure shows the historical evolution of urban morphology in Fort Kochi–Mattancherry.

Tourism operates as a seasonal activity, intensifying during events such as the Kochi–Muziris Biennale and cruise arrivals. These periods generate sharp increases in mobility demand, leading to congestion, competition for street space, and shifts in public space use, frequently disrupting residents’ everyday mobility and reinforcing spatial and social tensions within the heritage precinct.

• **Mobility Modes in Use**



Figure 5 : Walking , Ferry Transport and Auto-Rickshaw Ride, Source: Author (2025). Key everyday mobility modes in the heritage precinct: walking, ferry transport, and auto-rickshaw travel.

Residents primarily rely on:
Key everyday mobility modes in the heritage precinct: walking, ferry transport, and auto-rickshaw travel.

Walking

Walking is the most efficient and low-energy mode for daily movement in compact historic environments such as Fort Kochi and Mattancherry, supported by mixed-use proximity and short trip distances. It enables circulation within narrow streets, reduces congestion and energy use, and sustains street activity and social interaction essential to the historic urban fabric.

Ferry Transport

Ferry transport provides the most time-efficient connection to mainland Kochi, bypassing congested road corridors through backwater routes. It offers predictable, energy-efficient travel while reducing commuter pressure on narrow streets and strengthening metropolitan connectivity.

Auto-Rickshaws

Auto-rickshaws serve as the primary last-mile connector, linking pedestrian areas with ferry terminals, bus stops, and heritage clusters. Their compact size and flexible routing support efficient movement within narrow lanes, improving multimodal continuity and supporting everyday and tourism-related travel.

Tourist-Oriented Mobility

Tourists primarily rely on guided circuits such as rickshaw tours and pedestrian promenades linking landmarks, waterfronts, markets, and heritage nodes. These routes improve legibility, manage footfall, and reduce conflicts by channeling movement along defined corridors. Shared mobility serving heritage attractions—including e-rickshaws, shared autos, bicycles, and micro-transit—further concentrates visitor demand at multimodal nodes, improving last-mile access and reducing vehicular pressure on narrow streets. Overall, this system prioritizes visibility-driven tourist movement over everyday mobility needs.

Public Transport & Street Connectivity

Major mobility routes align with the primary road network connecting ferry terminals, bus stops, markets, and waterfronts, forming the main movement spine of the

precinct. These corridors support multimodal interchange, while narrower streets distribute localized movement in accordance with the street hierarchy. Internal lanes function as fine-grain corridors prioritizing pedestrians, cycles, and small vehicles, supporting walkability and access to daily needs. Streets such as Princess Street, Bazaar Road, and Jew Town Road operate as shared spaces where multiple modes coexist through negotiated movement. Approach roads such as Calvathy Road and River Road serve as key land–water interfaces, facilitating transfer between ferry, bus, and last-mile modes and improving overall network efficiency.

• **Existing Mobility Issues**

Several mobility choke points contribute to unequal outcomes across user groups. Poor lighting increases safety risks for women, encroached walkways restrict elderly mobility, and limited shade causes thermal discomfort, particularly in the coastal climate. Discontinuities in ferry access—such as missing sidewalks, unclear wayfinding, and weak feeder services—further undermine multimodal efficiency. Together, these conditions reinforce mobility inequities examined in Section 5.

METHODOLOGY

A mixed-method research design was adopted, combining spatial analysis with experiential inquiry to examine mobility justice in Fort Kochi and Mattancherry. Quantitative mapping identified infrastructural patterns, accessibility gaps, and modal hierarchies, while qualitative insights captured user perceptions of safety, affordability, and comfort, enabling mobility to be assessed as both a physical system and a socially embedded practice.

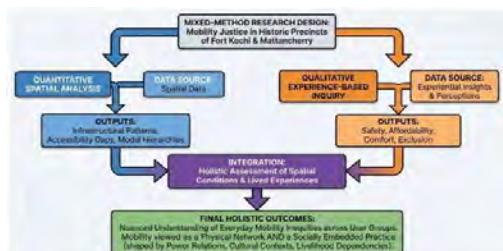


Figure 6: Framework of methodology, Source: Author (2025)

Mixed-method methodological framework integrating spatial analysis and experiential inquiry.

• **Spatial Mapping**

Field-based GIS tracing and observational mapping were used to document mobility conditions within the precinct. This process identified pedestrian network characteristics such as path continuity, surface condition, and coverage, as well as spatial relationships between ferry terminals and bus stops. Areas of movement conflict between tourists and residents were mapped to capture overlapping street use, and safety-related factors—including lighting, edge definition, and visibility—were recorded to assess their influence on mobility safety.

Transect Walks & Walkability Audit

Representative routes reflecting diverse mobility patterns were evaluated using a walkability audit framework. Routes were assessed for path continuity, surface quality, shade availability, and climatic comfort. Safety and visibility conditions, particularly lighting and enclosure, were examined, along with accessibility for elderly users and persons with disabilities, to capture variations in mobility experience across user groups.

• **Interview Insights**



Figure 7 : Physical Mobility, Source: Author (2025)

Physical mobility through pedestrian movement in the heritage precinct.

Informal Conversations

Informal conversations were conducted with women, elderly residents, informal workers, and tourists to capture lived mobility experiences across user groups. Women traveling for work and household needs emphasized the importance of predictable, safe, and time-efficient mobility, as fragmented walkability, poor lighting, and overcrowded transfer points restrict route choice and limit travel during early morning or late evening hours. Elderly residents highlighted difficulties navigating narrow, uneven, or obstructed pathways, particularly in the absence of shade, resting points, accessible crossings, and clear wayfinding, which discourages independent short-distance travel. Informal workers dependent on walking and shared auto-rickshaws reported high sensitivity to disruptions such as encroachments, irregular auto availability, and weak last-mile links, as these directly increase travel time, physical strain, and income loss. Tourists relied heavily on legible pathways, landmarks, and visual cues; discontinuous pedestrian routes and unclear wayfinding reduced experiential quality and increased movement conflicts in narrow streets. Overall, these insights reveal distinct variations in safety perception, comfort, travel behavior, and modal dependency across user groups, informing the mobility justice analysis presented in subsequent sections.

• **Mobility Justice Assessment Indicators**

The study employed accessibility and equity indicators adapted from Martens (2017), applied contextually to assess mobility justice within the heritage precinct. adapted from Martens (2017), applied contextually to assess mobility justice within the heritage precinct.

Table 1. Indicators for Mobility Justice Assessment, Source: Author (2025)

Dimension	Indicators Used	Data Source
Physical Access	Walkability, continuity, lighting	Transect observations
Transport Access	Proximity to ferry/bus nodes	Field mapping
Affordability	Cost of daily trips	Resident interviews
Safety & Comfort	Gender safety, seating, shade	User perception
Inclusivity	Support for elderly, disabled	Spatial audit
Equity Outcomes	Tourist vs. local mobility comparison	Survey + observation

This methodology integrates quantitative spatial analysis with qualitative lived experience, ensuring a justice-based assessment.

FINDINGS & ANALYSIS

The findings indicate that mobility in Fort Kochi and Mattancherry is shaped by an uneven allocation of spatial attention, wherein high-visibility tourist corridors receive greater investment while everyday mobility networks remain fragmented and under-served. Analysis is presented across four thematic dimensions.

• Tourist vs Local Movement Patterns

Tourist movement within the precinct is concentrated along beach promenades, major heritage attractions, and clusters of boutique hotels and cafés. Beach promenades function as primary pedestrian corridors supporting leisure-oriented walking under favorable spatial and microclimatic conditions. Major heritage attractions such as the Chinese fishing nets, St. Francis Church, and Jew Town act as high-intensity spatial anchors, generating concentrated pedestrian flows and shaping surrounding movement through landmark-based navigation. Boutique hotels and cafés further operate as localized attractors, producing steady pedestrian clustering and slower, exploratory movement that increases demand for unobstructed walkways, signage, and shared-space management. In contrast, local mobility flows extend between neighborhood markets, schools, ferry terminals, and inland working areas, reflecting routine, purpose-driven travel anchored in daily necessity. Market trips follow predictable, short-distance circuits reliant on continuous and shaded pedestrian routes. School-related travel generates time-bound peak movements requiring safe crossings and low vehicular conflict, while ferry access produces cyclical commuter flows dependent on clear wayfinding and reliable last-mile connectivity. Inland working areas attract linear, efficiency-oriented commuter movement that is highly sensitive to walkway discontinuities, encroachments, and thermal discomfort. The limited spatial overlap between tourist-oriented and resident-oriented movement corridors results in

infrastructure investment being concentrated along high-visibility tourist routes, while everyday mobility networks remain under-prioritized. This divergence reinforces exclusionary mobility outcomes within the heritage precinct. Local mobility flow map representing everyday resident movement within the heritage precinct.

Figure 8 : Local flow, Source: Author (2025)



Local mobility flow map representing everyday resident movement within the heritage precinct.

Outcome

Mobility infrastructure disproportionately benefits short-term visitors over long-term residents.

Movement Patterns Based on Street Hierarchy

Tourists primarily concentrate along primary and high-visibility secondary streets such as Princess Street, Bazaar Road, Jew Town Road, and Beach Road, which offer greater legibility, visual continuity, and amenity concentration. Landmark visibility, active frontages, and wider street geometry support intuitive navigation and slow, observational movement, reinforcing these corridors as the experiential spine of the heritage precinct. Residents, in contrast, rely mainly on secondary and tertiary streets for internal movement to neighbourhood markets, schools, and workplaces. These fine-grain corridors function as the everyday mobility network, supporting high-frequency, short-distance trips through narrower streets with lower vehicle speeds and closer alignment to residential clusters. Primary roads experience compounded pressure from tourist vehicles, buses, auto-rickshaws, and goods movement due to their role as high-capacity connectors linking ferry terminals, markets, and heritage attractions. This modal convergence increases conflict and congestion, particularly during peak periods. Tertiary lanes, meanwhile, remain low-traffic and resident-focused, supporting localized daily movement and preserving quieter, predictable environments. This contrast reveals a clear functional divide between tourist-oriented corridors and resident-oriented everyday mobility networks.



Figure 9: Tourist vs Local Mobility Heat Map, Source: Author (2025) The map contrasts concentrated tourist corridors with dispersed local mobility patterns across the study area.

The map contrasts concentrated tourist corridors with dispersed local mobility patterns across the study area.

Traffic Intensity Patterns

Field observations indicate clear variations in mobility pressure across Fort Kochi’s road network. High traffic intensity is concentrated along Calvathy Road, Bazaar Road, KB Jacob Road, Bellar Road, and Jew Town Road, driven by ferry access, market activity, and tourist inflow. Moderate traffic levels occur on Princess Street, Rose Street, Peter Celli Street, Parade Road, and Napier Street, where mixed pedestrian and auto-rickshaw movement is common. Low-traffic conditions characterize residential lanes such as Lilly Street, Ridsdale Road, AB Salem Road, and Jews Street, which experience smoother flow and minimal conflict. Traffic intensity is also time-dependent. Morning peak hours (8–10 AM) show heightened congestion along Calvathy Road and KB Jacob Road due to overlapping resident commutes, school trips, and goods movement.



Figure 10: Traffic intensity in the morning, Source: Author (2025), Midday (11 AM–4 PM): Tourist activity intensifies congestion along Princess Street, Jew Town Road, and Bazaar Road.



Figure 11: Traffic intensity in midday, Source: Author (2025) Evening (5–7 PM): Return commutes and tourist exit movements sustain congestion levels. mobility faces structural delays, whereas tourist activity intensifies midday crowding.



Figure 12: Traffic intensity in the evening, Source: Author (2025), These pictures highlight how everyday resident mobility faces structural delays, whereas tourist activity intensifies midday crowding.

• Pedestrian Accessibility and Walkability Gaps

A walkability audit (across 14 representative transects) demonstrated:

Table 2. Walkability audit (Source: Author (2025))

Challenge	Description	Disproportionately Affected Groups
Discontinuity	Encroachments, parked vehicles break footpaths	Elderly, disabled
Safety Risks	Poor lighting, blind corners	Women at night
Thermal Discomfort	Lack of shade in waterfront paths	All, especially elderly
Surface Quality	Uneven / broken pavements	Elderly, disabled
Tourism Barriers	Shop spillovers blocking walking routes	Residents on daily errands

Key Conflict Streets Affecting Walkability

Several streets experience recurring pedestrian–vehicular conflict due to narrow heritage geometry and unregulated street activity. Bazaar Road faces high conflict from market loading and unloading overlapping with pedestrian movement. Princess Street experiences persistent overcrowding as tourists, cycles, and auto-rickshaws share a narrow commercial corridor. Jew Town Road exhibits severe congestion during midday tourist peaks, when buses, vendors, and autos converge, creating unsafe walking conditions. These conflict zones demonstrate that commercial and tourism-oriented streets absorb disproportionate movement pressure, adversely affecting residents’ everyday walkability and safety.

Street Connectivity and Walkability Findings

Fort Kochi is characterized by compact, human-scaled streets with continuous built edges and mature tree canopies that support pedestrian comfort. Streets leading to markets, waterfronts, and heritage zones experience high pedestrian volumes but often lack continuous sidewalks, resulting in frequent pedestrian–vehicle interaction.



Figure 13 : Nollli maps of Princess street, Napier street, Calvathy street, Bazaar road and Jew street Source: Author (2025). The Nollli maps show variations in street connectivity, block patterns, and spatial continuity.

Internal neighbourhood lanes generally offer favorable walkability conditions; however, their weak connectivity to primary mobility corridors limits accessibility. The organically evolved street layout, with irregular geometry and varying widths, creates discontinuities between

residential areas and key waterfront transport nodes. Curving street patterns, mixed land-use interfaces, and inconsistent signage further constrain wayfinding and pedestrian navigation within the precinct.

Table 3. Street typology characteristics

Street	Historical Character	Street Pattern & Orientation	Key Connections & Landmarks	Width & Mobility Character
Princess Street	One of the oldest colonial streets with Portuguese, Dutch, and British influence	Narrow, linear street oriented roughly north-south	Connects the seafront and Chinese fishing nets to Loafer's Corner, intersecting Peter Celli Street and Bastion Street	Narrow, pedestrian-friendly; tightly lined buildings with minimal setbacks
Napier Street	Historic colonial street within the conserved heritage zone	Narrow, linear connector between Beach Road and Parade Ground	Linked to Lilly Street, Bastion Bungalow precinct; landmarks include Parade Ground and St. Francis Church	Pedestrian-scale street with continuous built edges
Calvathy Road	Historic arterial road forming part of the centuries-old Fort Kochi-Mattancherry trade route	Linear arterial corridor accommodating mixed traffic	Connects Fort Kochi waterfront and ferry jetties to Mattancherry; landmarks include Calvathy Juma Masjid, dargah, cultural centers, hotels, and shops	Wider than heritage lanes; supports continuous vehicular and pedestrian movement

Bazaar Road	Centuries-old trading street central to Kochi's historic spice trade	Narrow, linear commercial street	Links Mattancherry Palace area to Jew Town and Calvathy canal; historically connected warehouses to the waterfront	Narrow mixed-use corridor; frequent congestion and pedestrian-vehicular conflict
Jew Street	Historic Jewish settlement street established in the 16th century	Narrow, linear, pedestrian-oriented street	Connects Mattancherry Palace (Dutch Palace) to Paradesi Synagogue (1568)	Narrow, walkable street with limited vehicular access

• **Water-Based & Public Transport Access**

Ferries constitute the most time-efficient and affordable transport mode for residents, particularly for daily work and livelihood-related travel. Despite their importance, ferry terminals exhibit significant infrastructural gaps, including the lack of universal access ramps, limited seating and shade, and weak integration with adjacent streets and bus networks. These deficiencies disrupt last-mile connectivity between water-based and land-based mobility systems. Auto-rickshaws often compensate for these gaps, but increased reliance raises travel costs and disproportionately burdens low-income workers, reinforcing existing mobility inequities.

Finding

Despite its heritage value and ecological advantages, water-based mobility remains poorly integrated within the precinct's multimodal transport planning framework.

Public Transport

Public transport in Fort Kochi and Mattancherry is primarily provided by buses and auto-rickshaws, forming a layered system that connects residential areas with markets, schools, ferry terminals, and heritage streets. Within the narrow and irregular historic street network, buses function as trunk services along major corridors, while auto-rickshaws act as feeder modes extending access into secondary and tertiary lanes. This complementary structure reduces last-mile gaps and supports routine trips

such as work commutes, school travel, market errands, and ferry transfers. Bus movement is concentrated along KB Jacob Road, Bellar Road, Calvathy Road, and key connector streets that form the backbone of the local road hierarchy. These corridors support higher passenger volumes and provide the primary medium-distance connection between the heritage precincts and mainland Kochi, offering a cost-effective and schedule-reliable option for workers and students. Auto-rickshaws serve as the principal last-mile mode, enabling access to narrow internal lanes and supporting door-to-door mobility, particularly for elderly residents, informal workers, and low-income households. Together, these modes function not only as transport services but as essential social infrastructure shaping everyday accessibility and inclusion within the heritage precinct.

Table 4. Transportation data , Source: Author (2025)

Transport Mode	Best For	Cost Range	Operating Time	Notes
Kochi Metro	Fast city travel	₹10 – ₹60	6:00 AM – 10:30 PM	Eco-friendly; avoids road traffic
Railways	Intercity & state travel	₹30 – ₹500	24/7	Advance booking recommended for long trips
KSRTC Buses	Budget travel	₹10 – ₹100	5:00 AM – 10:00 PM	May experience crowding
AC Low Floor Buses	Comfortable city travel	₹20 – ₹120	6:00 AM – 10:00 PM	Preferred by tourists
Uber / Ola / Taxi	Comfort & direct routes	₹10/km – ₹15/km	24/7	Convenient but costlier
Auto-Rickshaws	Short-distance travel	₹30 base fare, ₹15/km	24/7	Fare negotiation common; Uber Auto available
Water Metro / Ferries	Scenic & quick backwater travel	₹5 – ₹40	6:30 AM – 9:00 PM	Best for island connectivity
Self-Drive Cars	Independent exploration	₹1,500 – ₹2,500/day	24/7	Requires valid driving license
Bike Rentals	Budget-friendly touring	₹300 – ₹700/day	24/7	Ideal for solo travelers

Circulation Constraints Affecting Access to Ferries and Public Transport

Field mapping indicates that narrow carriageways along approach roads to ferry terminals and bus stops experience high circulation pressure.

The images show circulation constraints from narrow streets and informal roadside activity, causing bottlenecks.

- On-street parking on Calvathy Road, Bazaar Road and Princess Street reduces road width and slows movement for autos, buses and pedestrians.
- Tourist buses stopping near Jew Town Road and Princess Street create midday congestion, blocking access to waterfront transit points.
- Goods loading and unloading on Bazaar Road during morning and evening hours further restrict circulation and overlap with resident travel times.
- These circulation issues weaken last-mile connectivity to ferries, auto stands and bus stops.
- As a result, access to both water-based and public transport becomes slower, less reliable, and more challenging for daily users—especially residents who depend on these modes.



Figure 16: Circulation constraints, Source: Author (2025) The images show circulation constraints from narrow streets and informal roadside activity, causing bottlenecks.

Impact on Vulnerable Groups

Marginalized communities face the highest mobility barriers:

Table 5. Lived Mobility Challenges by User Group, Source: Author (2025)

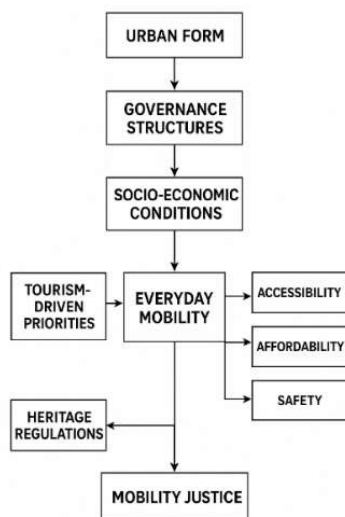
User Group	Primary Barriers	Evidence from Field
Women	Fear of harassment, poor night visibility	Route avoidance after dark
Elderly	Slopes, steps, uneven pavements	Reliance on help from others
Informal Workers	Long walking trips + unaffordable autos	Increased fatigue + lost income
Low-income Households	Transport costs vs daily wage trade-off	Reduction in trip frequency

CONCLUSION

The findings demonstrate that mobility inequity in Fort Kochi and Mattancherry is a structural condition rather than a standalone infrastructural issue, reinforcing existing social and economic disparities. While tourist-oriented mobility environments receive selective enhancement,

resident communities face persistent barriers to safe, affordable, and accessible movement. This reflects a systematic prioritization of tourism-led consumption over everyday accessibility. Positioned within debates on mobility justice and heritage governance, the study highlights how power relations embedded in planning practices produce unequal mobility outcomes in historic urban precincts.

RECOMMENDATIONS



The proposed mobility strategies aim to address structural inequities in movement systems while respecting the spatial and cultural sensitivity of the Fort Kochi–Mattancherry heritage precinct. Parking and traffic management interventions, such as the provision of multi-use parking zones near the Parade Ground and ferry access points, can reduce vehicular pressure within the heritage core. Restricting tourist bus drop-offs to peripheral areas and introducing time-regulated loading and unloading along Bazaar Road would further minimize conflicts between goods movement, tourist activity, and everyday local travel, thereby improving circulation efficiency during peak periods. Enhancements to pedestrian infrastructure are central to achieving equitable mobility outcomes in compact historic environments. The provision of continuous and unobstructed sidewalks along key streets such as Princess Street, Bazaar Road, and Jew Town Road would significantly improve walkability and reduce pedestrian–vehicular conflict. Complementary measures including improved street lighting, shading, wayfinding signage, and safer pedestrian crossings would enhance comfort, safety, and accessibility, particularly for women, elderly residents, and informal workers who rely heavily on walking for daily mobility. Improved integration between water-based and land-based public transport systems is critical for strengthening multimodal connectivity. Designated pick-up points, shelters, and clearly defined transfer zones between ferries, buses, and auto-rickshaws would enhance last-mile accessibility and reduce dependence on private motorized transport. Integrating Water Metro services with local mobility nodes would further support sustainable travel choices while reinforcing the role of ferries as a primary mobility mode for residents.

From a tourism management perspective, the introduction of guided tourism circuits can help redistribute visitor footfall across the precinct, reducing congestion in high-pressure streets and improving visitor experience. Locating designated parking and halting zones for tourist buses outside narrow heritage lanes would prevent large-vehicle intrusion into pedestrian-dominated spaces, thereby preserving the character of the historic streetscape. Collectively, these measures contribute to a more balanced and just mobility system that prioritizes everyday accessibility alongside tourism functions. By aligning mobility planning with principles of equity, multimodal integration, and heritage conservation, the study demonstrates how historic urban precincts can accommodate both livelihood-based movement and visitor activity without reinforcing spatial or social exclusion.

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