



22 October 2020

Supervisor: Professor Roger Behrens

## **Transport policy and planning**

### **Case study of the Jak Lingko initiative and lessons for Cape Town**

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## Acknowledgements

I would like to thank Kevin Hulu and Rini Indahwati who have been instrumental in illuminating my understanding of transport in Jakarta. I would like to thank the members of Organising for Work who participated in this research and the support of Kevin Mutia.



The UCT Knowledge Co-op facilitated this collaborative project with Organising for Work.

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This research was supported in part through funding assistance from University of Cape Town (University of Cape Town, Private Bag X3, Rondebosch 7701).

This research was supported in part by the National Research Foundation of South Africa (Grant number 980000000331)

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## Abstract

This paper explores the themes of transport affordability for low-income communities and transport integration, paying particular attention to the implementation of the Jak Lingko initiative in Jakarta. The paper pays special attention the fare integration between the microbus service and bus rapid transit (BRT) service in Jakarta and what impact this has had in terms of enhancing access to subsidised transport services.

The Jak Lingko initiative has resulted in enhanced affordability by reducing the overall cost of multi-modal journeys; increased ridership on the Transjakarta BRT service and improved the quality and value of the microbus service. Given the similarities between Jakarta and Cape Town, namely an integrated transport agenda, a large population of low-income residents, a modern bus-rapid transit (BRT) system and a paratransit transport service liken to the local minibus taxi, Cape Town can therefore gain some useful insights based on what Jakarta has been able to accomplish.

The study adopts a passenger perspective, looking closely at fare policy and includes a survey of public transport users from low-income communities in Cape Town. The survey results found that the use of unsubsidised transport services was high with 86% of respondents using the minibus taxi for travel. For low-income communities on the urban periphery, minibus taxis are often the only readily available mode of transport but are also the most expensive as they are not subsidised. Compounding this issue are the long travel distances to urban centres which further increases travel costs. A primary aim of the paper was to highlight how multidimensional transport integration can reconnect low income communities to subsidised transport services which enhance affordability, promote access to opportunity and mitigate against costs associated with long multimodal journeys.

*Keywords: low-income, affordability, transport integration, Jakarta, Jak Lingko, Cape Town*

## 1. Introduction

There are multiple factors that influence a person's ability to access and use public transport. Two such factors are the intersection of physical proximity to a mode of transport and financial accessibility to transport services in terms of fare affordability.

Given South Africa's history of inequality its legacy persists in South African cities where urban residents experience unequal access to resources like transport in both spatial and financial terms. An equitable city is one that is characterised by the fair distribution of resources for the users of urban space (Boschmann & Kwan, 2008).

Access to resources like transport have a direct correlation to quality of life and ability to reach opportunities for work, education and healthcare. The people who are most vulnerable to the effects of the unequal city are those with low incomes, often resigned to living on the outskirts of the city and required to travel much further to reach opportunities (Boschmann and Kwan, 2008). As such, the perspective of the low-income transport user will be central in this paper and more specifically how cost and proximity to transport intersect and influence work prospects.

Transport policy which considers this intersection seeks to halt cycles of disadvantage and combat the isolation faced by low-income urban residents and approach the ideals of the equitable city.

### 1.1. Aim of the research

The central research question this paper seeks to explore is how the Jak Lingko initiative from Jakarta has enhanced financial and physical access to public transport to benefit low-income communities, and what lessons Cape Town can learn from the experience.

Jakarta was chosen as the city for this case study because its transport landscape has four key similarities to Cape Town, namely an integrated transport agenda, a large population of low-income residents, a modern bus-rapid transit (BRT) system and a paratransit transport service likened to the local minibus taxi.

The lack of modal integration of Cape Town's transit services has led to a situation of fierce competition between providers and high cost and inconvenience associated with multimodal travel for passengers. Cape Town Comprehensive Integrated Transport Plan has emphasised that Cape Town's transport future will be built on the pillars of integration, adopting multimodalism and interoperability between transport services. The end goal being to attain synergy between, modes of transport, the ticketing systems and the relationship between scheduled and on-demand transport.

A common challenge faced by low-income transit users in Cape Town is spending the greatest percentage of their income on travel relative to other income groups. This occurs in conjunction with low-income communities also having limited proximity to subsidised transport services due to poor coverage of those services on the urban periphery (Venter, 2011). One such service being the MyCiTi bus rapid transit (BRT) system which particularly poor impact serving low-income areas on the eastern side of the metropolitan area while also suffering with low-ridership in general (See Figure 4).

A third challenge emerges due to the unsubsidised fares charged by the minibus taxi service. Unlike the MyCiTi BRT service, the minibus taxi operates independent of state support. As a result, the minibus taxi service is one of the most expensive modes of public transport. This is concerning because unfortunately it is often the only form of public transport readily available in low-income areas.

The city of Jakarta has experienced similar challenges to Cape Town but has made great strides to address these challenges. Key to their success has been the introduction of the Jak Lingko initiative which prioritised both modal integration and fare integration between the paratransit



microbus system and the formal BRT system. These integration efforts have enhanced affordability; increased ridership on the Transjakarta BRT service with a microbus feeder service and improved the quality of the microbus service.

What Jakarta has achieved is very much in line with what Cape Town hopes to achieve. The Cape Town transport authority seeks to enhance affordability of travel in the interest of promoting social equity; it aims to increase ridership and productivity of the MyCiti BRT service and finally rationalise the minibus taxi service as part of the integrated transport system. Cape Town can therefore gain some useful insights based on what Jakarta has been able to accomplish.

This paper will explore how the Jak Lingko initiative was implemented in Jakarta and reflect on the themes of transport affordability and transport integration; and what benefits these hold for low-income communities.

## 2. Research methodology

Lucas (2012) illustrates how transport disadvantage and social disadvantage intersect to produce transport poverty leading to lack of access to opportunity and ultimately feeding into a cycle of social exclusion (See Figure 1). Of particular interest in this study are 1) geographic exclusion, where low-income communities on the urban periphery often have longer distances to overcome to reach opportunity and 2) economic exclusion, where high monetary cost of travel limits ability to pay for and consume transport as a services (Lucas, 2012).

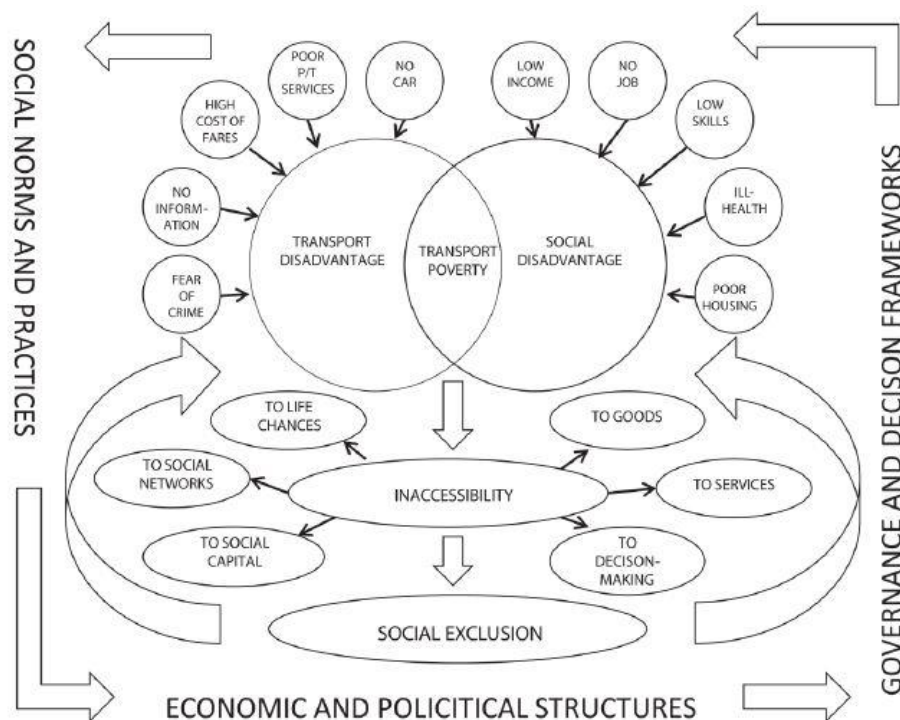


FIGURE 1: THE RELATIONSHIP BETWEEN TRANSPORT DISADVANTAGE AND SOCIAL EXCLUSION

Source: (Lucas, 2012)

A study by Banerjee and Sequeira, (2020) illustrated the high monetary costs of travel for low income groups meant that they would only have the ability travel occasionally. This severely limited job-seeking success, noting that “91% of job seekers [from their sample] believe that professional jobs [...] are located in the city centre, and that, the two most likely strategies to get these jobs are to get referrals and drop off CVs in person at firms. Since they do not have the social connections [for referrals], and cannot afford to go often to the city centre, they do not search enough for the jobs that they want.” The suppression of job-seeking trips due to cost, works to further compound socio-economic exclusion and income prospects for the unemployed.

In 2017, the City of Cape Town together with the MyCiTi BRT, made an effort to address the issue of travel cost for job seekers. Eligible job seekers<sup>1</sup> were offered free MyCiTi *myconnect* cards and two free journeys on the MyCiTi bus every week as a means of supporting their efforts to find employment. 100 000 cards were made available in November of 2017 and loaded with a special travel package associated with this initiative (MyCiTi, 2017).

Although the impact of the MyCiTi initiative was not assessed, the study by Banerjee and Sequeira (2020) may provide insight to the impact of offsetting transport costs for job-seekers. The experiment consisted of randomly selecting a treatment group for their study, who were given job search subsidies, through smartcards, to search for jobs in the city centre. By contrast, a control group, who were not given financial support for the job search, received a smartcard that allowed the researchers to record and observe their travel patterns.

What they found was that “providing job search subsidies led beneficiaries to search more intensively relative to the control group, by traveling more frequently and covering a wider geographic area in the job search.” The impact of the subsidy also gave job seekers a more realistic view of the job market in the city centre; enabled commuters to learn about the cost of commuting to the city centre and rendered jobs in the peripheral townships at least as attractive as jobs in the city centre” (Banerjee and Sequeira, 2020). These findings contribute to laying the foundation for more formal establishment of job seekers as a concessionary group in transit subsidy discourse.

## 2.1. Organising for Work

In order for transport initiative to target impact in low-income communities, measuring and understanding their transport expenditure and travel patterns is vital. Organising for Work (OFW) is a non-profit embedded in several low-income communities of Cape Town that operates work-readiness programs and is a key partner in this study. Reducing the barriers to entering the workforce is central to Organising for Work’s mission. A particular issue for OFW members is the cost of travel – for work-related trips such as interviews, training, information gathering and commuting to work.

In an effort to deepen the understanding of travel expenditure this paper conducted a survey of OFW members to extract insights from the passenger perspective about the needs and

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<sup>1</sup> Job seekers from specified sub-councils had to be unemployed and registered on the Expanded Public Works Programme jobseeker’s database by 1 October 2017 in order to be eligible.

patterns of members for work related trips. The survey drew from Venter's (2011) framework for detecting affordability and sought to find out:

- Absolute transport expenditure on work-related trips
- Proportional transport expenditure compared to income
- Cost-saving techniques used
- Presence of latent travel demand for work-related trips (suppressed travel)
- Individual perceptions of affordability

The sample consisted of seven respondents selected at random from the OFW member database. It should be noted that the small sample size does not statistically represent the larger target population. Respondents were individually asked 20 multiple-choice questions which were offered in either English or IsiXhosa.

The survey instruments used were mobile messaging applications namely, WhatsApp and Moya Messenger. This was due to COVID-19 travel restrictions that were in place at the time preventing in-person surveys. The chat format allowed respondents to ask clarification questions as well provide additional detail about their responses.

The respondents were all residents of the Cape Town Metropolitan area and were between the ages of 28 and 49. Five of the respondents were employed and two respondents were unemployed. The incomes of the respondents ranged from no income to R8 001–R11 000 per month. Sources of income for travel either came from family and friends or work income.

The limitations of this method were that the survey was limited to members who had smartphones and internet access (WhatsApp uses data or Wi-Fi and Moya Messenger is zero-rated). Internet access and stable connectivity was a recurring issue for respondents thereby extending time need required to complete the survey.

Secondly, the sample also included 2 respondents with higher incomes which may fall outside of what is considered low-income however they still reside in largely low-income communities with limited access to subsidised transit services.

This research first examines the approach taken in Jakarta and finally discusses how such a plan may or may not be able to address the realities faced by the OFW survey sample in Cape Town. Information about Jakarta was gathered from online resources published by the PT Transjakarta transport company about the Jak Lingko programme, academic research, newspaper entries and personal accounts from Jakarta transit users.

### 3. Contextual Framework

#### 3.1. Affordability and accessibility

Access to public transport is often discussed and measured in terms of service coverage over an area and the spatial proximity people have to the transport service (Delbosc and Currie, 2011; Murray, 2001). However Aivinhenyo and Zuidgeest (2019) and Venter (2011) highlight another dimension of access, that of financial access to public transport; in terms of the ability to afford travel. This is because in addition to one's proximity to a transit service, the fare price charged to use the service is a key factor in determining the quantity of travel people consume (Aivinhenyo and Zuidgeest, 2019; Lucas, 2012).

The affordability of public transport fares is marked as a priority in the South African Department of Transport's 2050 National Transport Master Plan, in the interest of promoting socio-economic equity and access to opportunity.

In a targeted analysis of affordability Venter (2011) analysed data from the 2003 National Household Travel Survey conducted by the South African Department of Transport using home interview surveys of 9 906 individuals who use public transport. A significant number of respondents highlighted affordability as an impediment to travel usually citing that public transport was too expensive or that they had no money to use it.

Venter (2011) found that 20% of all the public transport users earning R1 500 - R6 000 per month and that 24% of public transport users earning less than R1 500 per month identified affordability as one of their two most important transport problems. Given that minibus taxi fares are higher compared to other public transport modes (bus and rail) it is concerning that mode share across both these income groups was at over 60% to minibus taxi and less than 37% to rail/bus services (Venter, 2011).

Ten years on, in the 2013 edition of the National Household Transport Survey respondents were asked about the main reason they had not travelled in the last week. The third most commonly cited reason was that travel was too expensive, which was given by 11,3% of all individuals in the national sample. This reason was particularly common in the 26 – 40 year old age group (Statistics South Africa (STATSSA), 2014).

Fare policy in Cape Town states that affordability of fares will be evaluated by assessing how many trips are made at a given tariff rate (The City of Cape Town, 2014). This is consistent with

the theory that fare price strongly determines the quantity of travel consumed (Aivinhenyo and Zuidgeest, 2019; Jobanputra, 2018). It should be noted however that high transport expenditure does not reflect affordability especially for transit users who have to travel longer distances or use more expensive services because of a lack of alternatives.

Affordability is a key consideration for low-income groups in particular. The high costs of fares adversely affects low-income<sup>2</sup> groups because they are most dependant on public transport for mobility, more than any other income group (See Figure 2) (Fester and Behrens, 2019). Understanding the expenditure of poorer households is of greater importance in a broader policy environment which has a focus on socio-economic equity (Behrens and Venter, 2006). In this context, a concerted effort is required from the state, as a regulatory authority, to reform fare pricing to make travel more financially accessible and affordable for users.

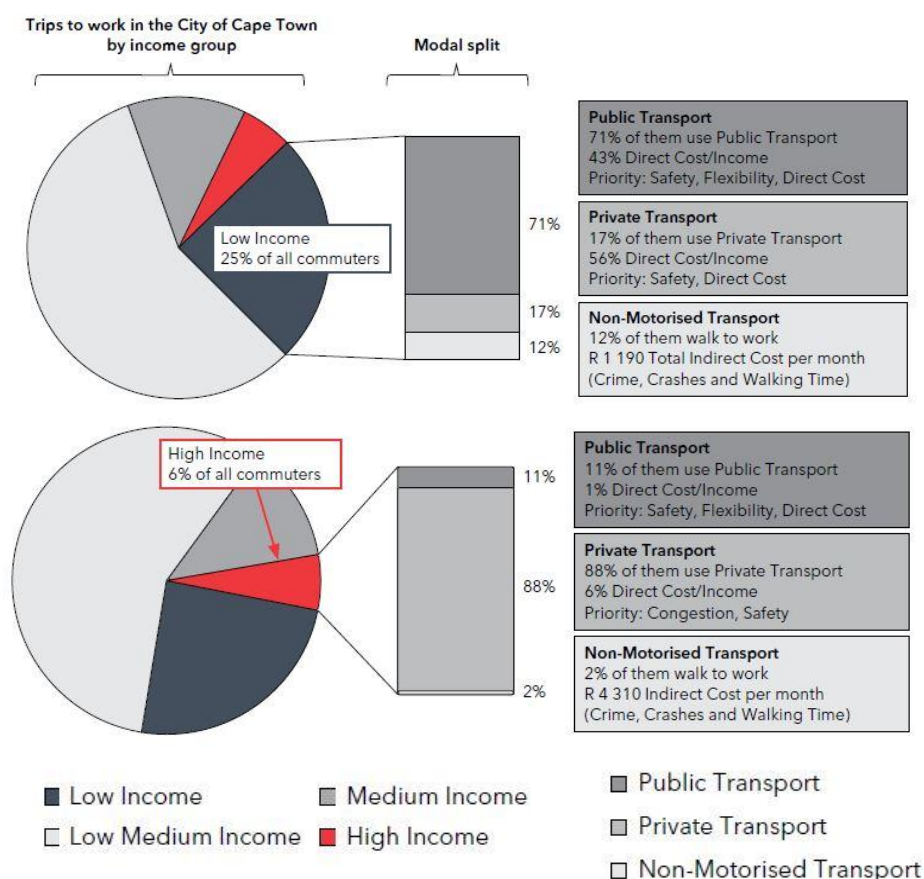


FIGURE 2: MAIN MODE SHARE FOR WORK TRIPS BY LOW-INCOME HOUSEHOLDS IN CAPE TOWN

Source: City of Cape Town Comprehensive Integrated Transport Plan 2018 – 2023 (Jobanputra, 2018)

<sup>2</sup> City of Cape Town Comprehensive Integrated Transport Plan 2018 – 2023 defines low income between R0 – R4000 monthly

Aivinhenyo and Zuidgeest (2019) describe travel affordability as the financial burden individuals and households bear in purchasing transportation services. However in monetary terms, what is considered affordable or “financially burdensome” to individuals can have wide variation (Venter and Behrens, 2005).

In a bid to move toward a definition of affordable, the affordability benchmark used most widely in the South African context is spending “less than about 10% of disposable income on public transport”, as per the *White Paper on National Transport Policy of 1996*. This figure originates from a World Bank report from 1987, which recommends spending no more than 10% of *household* income (Venter and Behrens, 2005).

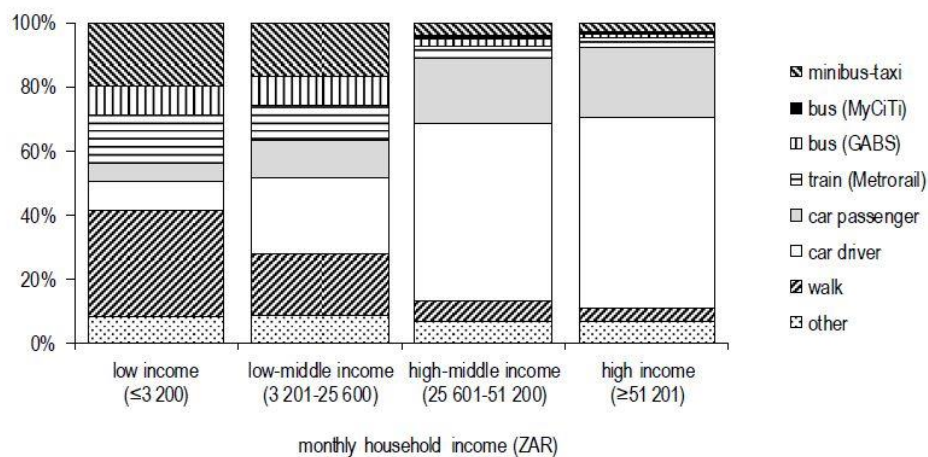
The standard of 10% continues to be the affordability benchmark in Cape Town as per the *Fares Policy for Contracted, Road-Based Public Transport* (2014) however it does not specify if this refers to personal or household income. There seems to be large gap between this ideal and reality because based on household expenditure analysis of 2013 NHTS data finds that nationally “more than two-thirds of households who fall in the lowest income quintile spent more than 20% of their monthly household income per capita on public transport” (Statistics South Africa, 2015).

The implications of this are that if the transport sector intends to promote socio-economic equity and move toward meeting affordability standards, there remains a need for fare-price regulation and a mechanism to lower passenger costs. A robust exploration of the financial burden placed on users of public transport is crucial to formulating appropriate, pro-poor fare policy and interventions (Venter, 2011; Venter and Behrens, 2005). An understanding of travel patterns and travel needs of low income groups, in qualitative and quantitative terms, will support regulating authorities in setting affordable fare levels and subsidy mechanisms (Venter and Behrens, 2005).

### 3.1.1. Why is affordable transport out of reach for low-income groups

Over two decades since the end of active enforcement of apartheid policy in South Africa, the legacy of apartheid persists, as it is deeply embedded in the urban form. Townships on the urban periphery which often suffer from poor transit provision are highly disconnected from opportunities in the urban centre. Haarof (2011) writes that this urban legacy cannot be wished away or easily reformed, and underscores the fact that the removal of restrictive legislation did not in itself result in urban reintegration. The slow rate of spatial transformation is a

symptom of the failure the state and private property markets to develop well-located land for social housing, which could bring low-income groups closer to opportunities in urban centres (Cooke et al. 2018). As a result, low-income groups continue to be subject to long distances to travel, long commute times and high transport expenditure (Boschmann & Kwan, 2008, Cooke et al. 2018). This is further compounded by greater dependence on the paratransit transport modes which ply these areas but which charge relatively high, unsubsidised fares (Venter, 2011)



Data source: Cape Town Household Travel Survey, 2013, n=22,332 households

FIGURE 3: MAIN MODE USED FOR WORK AND EDUCATION TRIPS BY HOUSEHOLD INCOME IN CAPE TOWN

Source: (Fester and Behrens, 2019)

Low-income groups have the dual-problem of very limited disposable income for travel and limited access to subsidised transport services. In the context of Cape Town, the public transport services that are subsidised by the state and which can offer passengers lower fares include the Metrorail train service, the Golden Arrow bus service (GABS) and the MyCiTi bus Rapid Transit (BRT) service. The 2013 Cape Town Household Travel Survey however finds that these subsidised public transport services have limited uptake by low-income groups (See Figure 3). The survey finds that minibus-taxis (MBT) still commands a large proportion (20.95%) of the low-income transport market where passengers are subject to unsubsidised fares (Fester and Behrens, 2019)

The MyCiTi BRT service performs poorest with the low-income demographic in Cape Town (0.04% share) compared to other state-subsidised options (See Figure 3) (Aivinhenyo and Zuidgeest, 2019; Fester and Behrens, 2019). A cordon count study carried out in 2012 showed



that the MyCiTi BRT service would often operate below its passenger capacity, with 70 seater buses carrying approximately 20-29 passengers during the peak period on average (Jobanputra, 2018).

Like Cape Town, the low-income communities in Jakarta tend to be located on the urban outskirts, subject to high transport costs due long travel distances and a significant dependence on unsubsidised paratransit transport options (See Figure 4) (van Steijn, 2014). Even with 12 corridors and spanning 200 kilometres, patronage of the Transjakarta BRT remained low and had poor service coverage in lower-income areas on the outskirts (See Figure 5) (Adiwinarto, 2020). In each context there seems to be an opportunity to link transit users in need of subsidised transport to transport services suffering from low ridership.

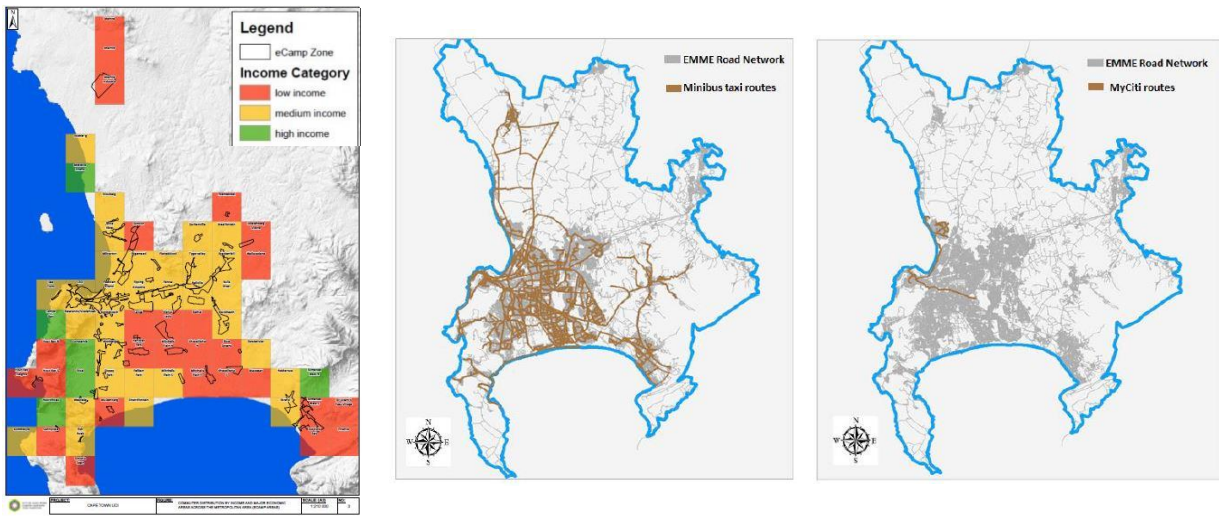


FIGURE 4: CAPE TOWN METROPOLITAN AREA INCOME DISTRIBUTION (LEFT) AND COVERAGE OF MINIBUS TAXI (MIDDLE) AND MYCITI BRT (RIGHT) SERVICES

Sources: Urban Development Index (CoCT, 2019), Integrated Public Transport Network Plan 2032 (CoCT, 2014)

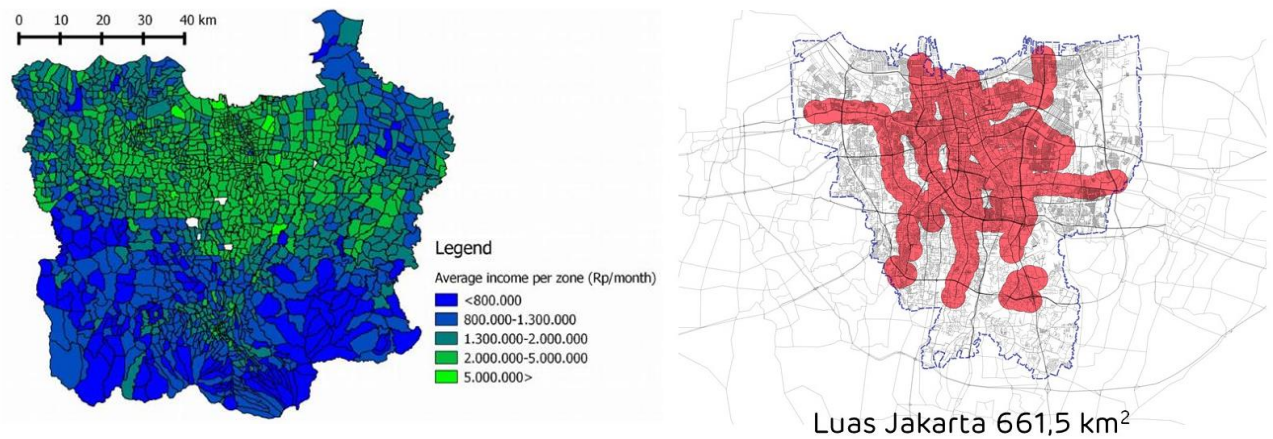


FIGURE 5: JAKARTA METROPOLITAN AREA INCOME DISTRIBUTION VS TRANSJAKARTA BRT COVERAGE IN 2015

Source: Steijn (2014), Transjakarta.co.id (2018)

### 3.2. Integration and fare policy

A study by Miharja and Priadi (2018) on the integration of transit services in Jakarta suggests that integrating different modes of transport in Jakarta would promote efficiency in the transit ecosystem of the city. However the benefits of this efficiency i.e. lower operational costs, only seem to accrue to the transport providers.

A common sentiment among transport users in South Africa is that multimodal travel is not preferred because of the high combined travel costs incurred on each mode. This is because without an appropriate fare-integration mechanism, modal integration alone does not ensure that users will enjoy lower costs for multimodal journeys (Plano et al., 2020).

This brings to light that there is no guarantee that the gains made in efficient transport operations will lead to lower fares for passengers and this may be due to the profitability motives of operators (Venter et al., 2018; Venter, 2011). To offset these negative impacts external regulation is needed to produce fare integration policy that pays special attention to affordability on multimodal trips. Venter (2011) agrees saying that a socially progressive fare policy requires government surveillance and control.

Fare capping is one such policy that has been used in Jakarta. It makes the benefits of a travel package available to those who cannot cover the upfront costs of travel package. The concept of fare-capping is simple; for instance if a single fare costs R7 per trip and a daily pass costs R14 per day, a user without a daily pass can take three or more rides in a day, on multiple modes and still only pay a maximum of R14. In other words if a user is paying per trip and the user reaches the equivalent-cost of a daily pass, they are not charged for additional trips for the remainder of the day. The same treat can be applied to weekly and monthly fares (TransitCenter, 2019).

In terms of equity, Venter et al. (2018) find that fare capping allows higher-income commuters with shorter trip distances to cross-subsidise poorer long-distance commuters. Fare caps benefit passengers making long and multi-modal journeys (typically from poorer, peripheral locations). In Bogota with a fare cap in place, Hidalgo and Yepes (2005) report total daily savings of 8%–12% of the daily income of low-income TransMilenio BRT passengers. (Venter et al., 2018).

A study by Aivinhenyo and Zuidgeest (2019) found that vehicle type and service type have strong influence on travel costs for passengers. Modal integration of minibus taxi and rapid transit bus services can provide multi-modal passengers better value for money by structuring the transit system around vehicular advantages and trunk-and-feeder service types. Longer trips (>12km) taken on the BRT buses along trunk-routes combined with shorter trips (<12km) taken on minibus taxi along feeder routes, would significantly improve value for money (See Figure 6) (Aivinhenyo and Zuidgeest, 2019).

The Comprehensive Integrated Transport Plan (CITP) for the City of Cape Town expresses clear interest in a ‘hybrid’ strategy with an objective to leverage the strengths of the minibus taxi industry and include them into the city’s transit service mix (Jobanputra, 2018).

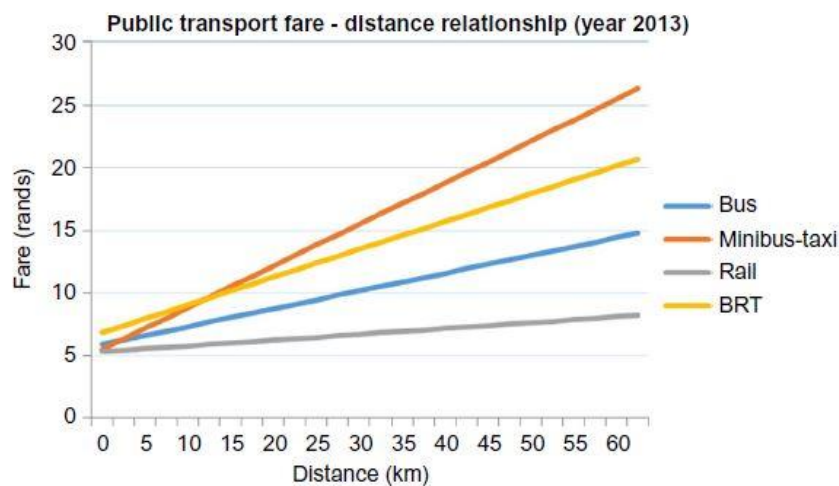


FIGURE 6: PUBLIC TRANSPORT FARE-DISTANCE RELATIONSHIP 2013 (INFLATION ADJUSTED FROM 2003 DATA)

SOURCE: (AIVINHENYO AND ZUIDGEEST, 2019)

To facilitate integration between the modes, the City of Cape Town Fare Policy also includes an intention to move towards fare integration and a universal fare collection system and indicates that the “establishment of an Integrated Multimodal or Multiagency Payment System” and the “development of an Interagency Fares Policy Agreement” (Jobanputra, 2018). Key to the success of the Jak Lingko initiative was fare integration and operational coordination of the microbus and BRT services. These two features make the Jak Lingko initiative from Jakarta particularly compelling as a case study for Cape Town.

## 4. Jak Lingko Initiative

### 4.1. Preparation

The Jak Lingko initiative was a programme led by the Provincial Government of Jakarta in order to revitalise and integrate the increasingly widespread public transport services in Jakarta. The name *Jak Lingko* was chosen because it reflected the concepts of networking and integration to be espoused in Jakarta's public transport system (The Jakarta Post, 2018). The word *lingko* means in essence means 'link' and is derived from the name of a farm irrigation system used in Manggarai, East Nusa Tenggara, in Indonesia, which makes use of interconnected water flow. This has influenced the logo and branding of the Jak Lingko system (See Figure 7).



FIGURE 7: JAK LINGKO BRANDING CONCEPTUALISATION

The need for the program arose out of the lack of modal integration, unstandardized operations management and quality of service across modes. Addressing integration and service quality in Jakarta were key to addressing increasing car use and congestion and shifting to encourage urban residents to use public transport more. One of the long-term goals of the programme is to integrate all road-based transit services in addition to all rail-based transit services thereby enhancing Jakarta's public transport offering. (Transjakarta Frequently Asked Questions, 2018). The mission of the Jak Lingko programme is to:

- a) Realise a transportation service that is smooth, safe, comfortable, and integrated
- b) Harness information technology to support the service

- c) Achieve a friendly transport environment and improve universal access
- d) Offer transportation fares which are affordable for the public

(Sobri et al., 2019)

The Jak Lingko programme has previously carried out integration of other transit services in Jakarta such as the Metro Rail Train (MRT) and Transjakarta BRT and more recently is expanding that integration effort to the microbus service in line with the long term goal of integrating all road-based transit services.

Led and administered by the PT Transjakarta the plan to integrate the BRT with the microbus service envisioned that a microbus operator would enter into a contract to operate a feeder-service with their microbus fleet, transporting passengers to and from BRT trunk routes and surrounding settlements. Passengers would then be able to continue their journey on the trunk routes with the BRT service. (Indahwati R., pers. comm., 3 August 2020).

The addition of the microbus into the Jak Lingko programme was enabled by a policy titled *Programs Decree of the Head of Service DKI Province Transportation Jakarta No. 305/2018: Implementation Phase of Transport Integration Program General Small Bus into the System Bus Rapid Transit (BRT)*, which was passed on the 28 September 2018 (Sobri et al., 2019).

Prior to the instatement of the 2018 policy, the 11-seater microbus vehicles were used almost exclusively in Jakarta's paratransit transport sector. The operations of the microbus service at that time were characterised by old vehicle fleets, flag-stopping at undesigned points on the route and unsafe driving. Drivers were required to pay a daily *setoran* (rental fee) to the microbus owner and any amount earned beyond that fee was their income. This would result in an erratic service as drivers had a perverse incentive to operate beyond capacity to transport as many passengers as possible. Drivers also would also employ reckless driving tactics in order to reach more passengers, causing frequent accidents (The Jakarta Post, 2015). Passengers were also required to pay in cash and often experienced price fluctuations due to a lack of fare regulation (Adiwinarto, 2020). The integration of the microbus and BRT system is of particular interest for the Cape Town as its minibus taxi system has analogous hallmarks to the Jakarta microbus service.

In order to facilitate this integration PT Transjakarta undertook the rationalisation of the microbus services, including fare price adjustment and development of an interoperable e-

ticketing and payment system for operators (Miharja and Priadi, 2018). The microbus feeder services was branded as Mikrotrans and is the latest addition to the three other feeder services that Transjakarta offers which cater to the different passenger segments and road conditions (See Figure 8).



FIGURE 8: TRANSJAKARTA BRT AND FEEDER FLEET

Source: (Adiwinarto, 2020)

#### 4.1.1. Rationalisation of bus services

In an effort to reduce the duplication of routes and increase productivity and frequency of services, redundant transport services were identified and eliminated or redistributed to underserved areas. The supply of vehicles was adjusted to match the demand requirements of an area such that high person-density areas where supplied with higher capacity vehicles and facilities and *vice versa* (Miharja and Priadi, 2018).

Microbus operators that entered into service contracts were required to meet new service standards as per their service level agreement (SLA). These standards pertained to compliance with road safety and licensing, schedule adherence, drivers becoming salaried employees, boarding and alighting only at designated stops, electronic payment and ticketing and vehicle upgrades to improve passenger comfort and safety <sup>3</sup> (See Figure 9). Furthermore, to unify the different modes of transport, vehicle branding was streamlined to assist passengers in identifying vehicles part of the Jak Lingko initiative (See Figure 10).

<sup>3</sup> (Indahwati R, personal communication, August, 3 2020)



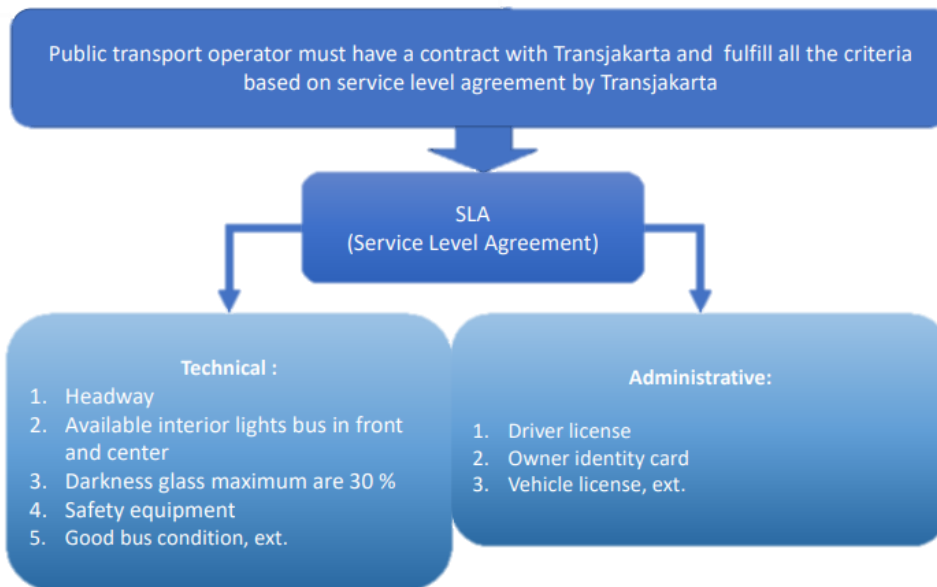


FIGURE 9: MICROBUS FEEDER SERVICE LEVEL AGREEMENT OUTLINE

Source: Indahwati R.

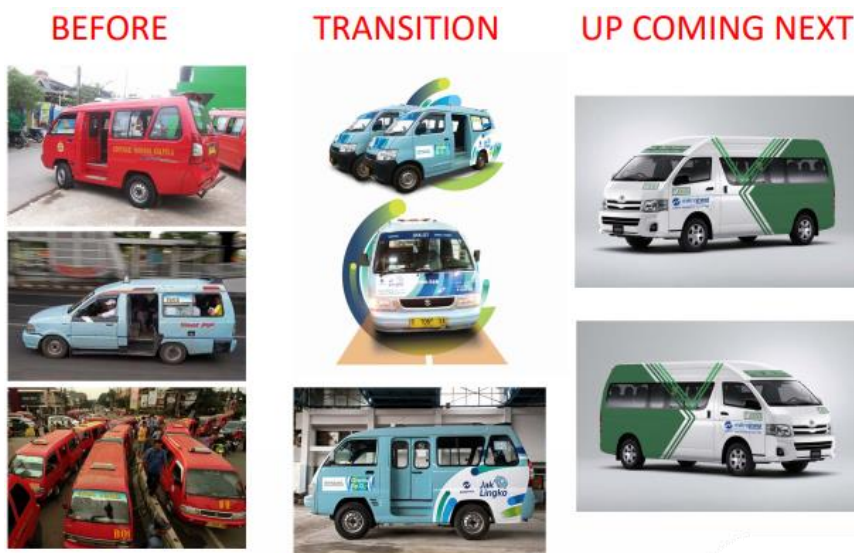


FIGURE 10: MICROBUS UPGRADING

Source: Indahwati R.



#### 4.1.2. Fare policy

The DKI Jakarta Provincial Government Transportation Agency is responsible for setting the fare tariffs for the Jak Lingko program. The agency calculates the fare price tariffs based on operating costs of the transit service and fare affordability for passengers (Sari, 2019). The agency plays an important role in regulating the profit-driven interests of the commercial operators using fare regulation instruments.

A 2017 statement from the chairperson of the Jakarta City Transportation Council mentioned that the average commuter spent 20-30% of their income on public transportation. The council aimed to reduce this figure to 14%. The chairperson assessed that the high cost of public transport was due to inefficiency saying: "Our transportation system is inefficient and slow. If everything is integrated, it will further reduce costs" (Puspita, 2017). Considering that the aim of the council is to reduce expenditure on transport it is assumed that integration refers specifically to fare integration.

A key selling point of the Jak Lingko initiative was that it would allow passengers to buy one ticket for their entire trip and make free transfers to all other integrated modes of transport. This required the unification of fare structures across all modes in the Jak Lingko system.

Other ways that the new fare structure worked to reduce expenditure was to provide fare discounts:

- i) Offering lower fares during the off-peak period to spread passenger demand
- ii) Offering fare caps for multimodal journeys made in a specified window period
- iii) incentivise user loyalty by offering discounts on weekly or monthly tickets and
- iv) offering travel subsidies to concessionary user groups such as the elderly, children, physically handicapped and the indigent – making up 30% of total passengers (Miharja and Priadi, 2018).

#### 4.1.3. Interoperable e-ticketing and payment system

In order to facilitate multi-modal travel and fare integration an interoperable ticketing and payment system was crucial. The Jak Lingko initiative made use of smart cards and smart card readers to carry out this function. This enabled users to make one payment using one card to access all transit services (Miharja and Priadi, 2018).

## JAK LINGKO: The Passengers should use electronic money and tap on the machines provided inside the fleet



FIGURE 11: JAK LINGKO SMARTCARD SYSTEM

Source: [www.transjakarta.co.id](http://www.transjakarta.co.id) (2018)

## 4.2. Implementation

### 4.2.1. Management

The PT Transjakarta Company is responsible for administering the Jak Lingko program operational activities for road-based transit services (See Figure 12). This includes coordinating stakeholders and managing the competing interests of the operators, drivers and passengers. Feeder service operators are required to comply with contractual agreements and adopt the Jak Lingko ticketing system (Sobri et al., 2019). As per the service level agreements (SLA) between PT Transjakarta and the Mikrotrans microbus operators, drivers are monitored for route-adherence using a tracking device installed in the vehicles and the electronic payment devices allow fares to be charged at the set tariff rates (Adiwinarto, 2020).

In order for a microbus owner to become an official feeder of the BRT service, they are required to be part of a microbus co-operative (See Figure 13). Individual microbus owners are able to establish co-operatives (such as Kopaja and Metro-mini) and as a co-operative may enter into a contract with PT Transjakarta as service providers on feeder routes. These co-operatives are then paid an operating subsidy on a per kilometre basis (Reinventing Transport, 2019).

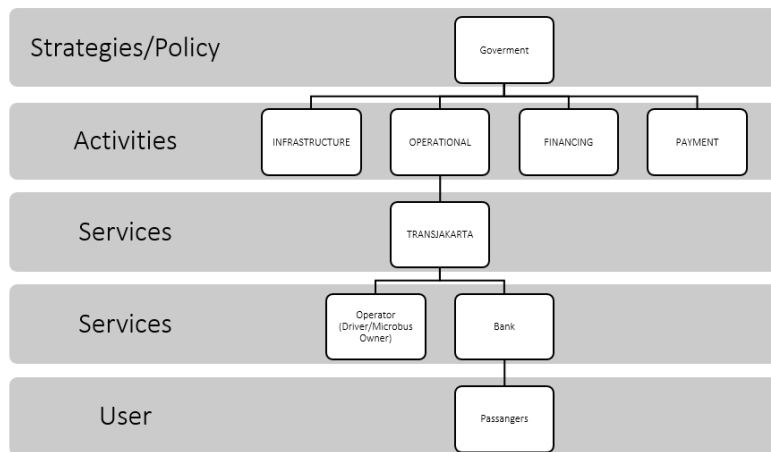


FIGURE 12: ORGANISATIONAL STRUCTURE

Source: Hulu K. (2020)

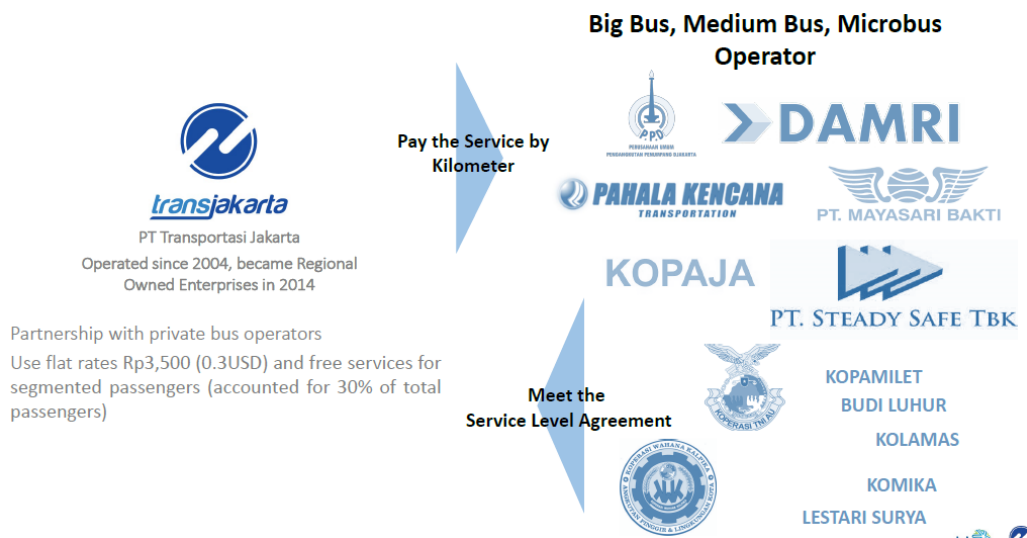


FIGURE 13: PT TRANSJAKARTA AND FEEDER SERVICE CONTRACTORS

Source: (Adiwinarto, 2020)

#### 4.2.2. Subsidy mechanism

The DKI Jakarta municipal government provides subsidies for each transportation mode as part of a Public Service Obligation. The Public Service Obligation was defined and regulated in a policy titled *DKI Jakarta Governor Regulation Number 62 of 2016 concerning Obligations of Public Services and Provision of Subsidies Sourced from the Regional Revenue and Expenditure Budget to Jakarta Transportation Limited Liability Companies*. The subsidy given to the transportation co-operative is the difference between the cost of operating the service and fare box revenue. It is necessary for the transport co-operative to provide the number of kilometres driven by each vehicle in fulfilment of service, in order to receive the subsidy.

There are five steps to the TransJakarta subsidy mechanism: proposing; verification; budgeting and implementation; disbursement; and lastly reporting and accountability. It is reported that the total subsidy amounts disbursed to Jakarta transit service providers for 2020 are as follows: Transjakarta BRT - Rp3 291 trillion (R3.8 trillion ZAR), Metro Rail Train - Rp285 billion (R330 million ZAR), and Light Rail Train - Rp439.6 billion (R508 million ZAR) (Sari, 2019). The large disbursement to Transjakarta BRT may be due to 1) the extent of the growing BRT network and 2) the multiple feeder services which support Transjakarta BRT.

#### 4.2.3. BRT and microbus integration

In order for the different Jak Lingko-integrated services to operate in a co-ordinated manner, PT Transjakarta mandated several changes for the selected Mikrotrans feeder buses to implement.

- Formal bus stops – A major challenge was the fact that many minibuses operated without using bus stops or designated areas for passengers to board and alight<sup>4</sup>. Use of formal bus stops is vital to enhancing safety and timeliness of the Mikrotrans<sup>5</sup>
- Route adherence – in order to enhance the reliability of the feeder service
- Schedule adherence – ensure transportation operates during operational hours and does not refuel during operational hours
- Monitoring measures – To ensure that operational fleet supply is running as per service level agreement standards
- User information – provide clear information about the transport route
- Equip vehicles with payment and ticketing devices<sup>2</sup>
- Infrastructure upgrading to enhance universal access

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<sup>4</sup> (Indahwati R, personal communication, August 3 2020)

<sup>5</sup> (Hulu K, personal communication, August 1 2020).

#### 4.2.4. Fare pricing and ticketing

Transit users can purchase a Jak Lingko card at Transjakarta terminals where clerks load credit on to the card. Users also have the option to top-up their Jak Lingko card at an ATM.

Regular passengers using any road-based mode in the Jak Lingko system are charged a minimum fare of Rp. 3,500 (R4 ZAR) with fares capped at Rp. 5,000 (R6 ZAR) for multi-modal trips provided, that they use their Jak Lingko smart card and make transfers to other modes within a 3 hour window (See Figure 14) (Adiwinarto, 2020). At the moment as part of sensitisation of the public to the microbus feeder service (Mikrotrans), users of the Mikrotrans are not charged provided that they use their Jak Lingko card to tap in and tap out of the vehicle. Regular passengers can also access discounted fares in the off-peak period. Before 07:00 AM passengers are charged Rp. 2,000.



FIGURE 14: FARE INTEGRATION FARE CAP

Source: (Adiwinarto, 2020)

To enhance compliance with fare policy and enable eligible passengers to access the various fare concessions and discounts the use of smart cards is crucial. PT Transjakarta assigns on-board officers to each Mikrotrans vehicle in order to process payments with an electronic card reader. The officers do not accept cash and are tasked with ensuring that passengers are charged the correct tariffs. This reduces the opportunities for fare evasion and gives passengers a reliable and fixed fare (Miharja and Priadi, 2018).

##### a. Fare concessions

Multiple passenger segments are eligible for fare concessions that allow them to enjoy free transit services. Passengers entitled to free services are defined in three local government policy documents, namely *Governor Regulation No. 160 of 2016* as enhanced by *Governor Regulation No. 26 of 2017* and *Governor Regulation No. 9 of 2018* (Transjakarta, 2019). Passengers eligible for concessions fall into two broad categories (See:

Table 1)

1. Jakcard Combo holders – who can apply at their the nearest Bank DKI
2. TJ Card holders – who can apply at the Transjakarta offices

Other passengers who do not have to pay fares include children under the age of two.

TABLE 1: TRANSJAKARTA CONCESSIONARY SEGMENTS AND RULES

	Jakcard Combo	TJ Card	Jak Lingko card
<b>How to get card</b>	Apply at the nearest Bank DKI	Apply at the Transjakarta offices	Purchase at Transjakarta terminals
<b>Eligible users</b>	<ul style="list-style-type: none"> <li>• School-going children</li> <li>• DKI Jakarta Provincial Government Civil Servants and their retirees</li> <li>• DKI Jakarta Provincial Government contract workers</li> <li>• Owners of Jakarta Smart Card (KJP) – such as children of Transjakarta drivers</li> <li>• Certain private employees/workers (salary according to UMP through DKI Bank)</li> <li>• Residents of Simple Rental Flats (Rusunawa)</li> </ul>	<ul style="list-style-type: none"> <li>• Elderly residents of DKI (60 years +) with Jakarta Identity Card</li> <li>• Persons with disabilities</li> <li>• Members of the Republic of Indonesia Veteran (with a Veteran Legion Card)</li> <li>• Members of the TNI (Indonesian National Army) and Polri (Indonesian National Police) – members, must wear uniforms and show membership cards</li> <li>• Social Protection cardholders (KPS Jabodetabek)</li> <li>• Seribu Islands Resident Identity Card (KTP) holders</li> <li>• Mosque management (Marbot)</li> <li>• Educators and education personnel in Early Childhood Education (PAUD)</li> <li>• Jumantik health workers</li> </ul>	<ul style="list-style-type: none"> <li>• All people not eligible for Jakcard Combo and TJ Card</li> </ul>
<b>Fare rules</b>	Free of charge	Free of charge	See Fare pricing and ticketing above for regular passengers

Source: (Hulu, K 2020; Adiwianto, 2020)

b. Fare Challenges

Fare integration has proven challenging, as there is difficulty reaching consensus on fare integration among the different transit operators due to their diverse fleet types and operational costs (Hulu and Kusuma, 2020; Sobri et al., 2019).

c. Ticketing Challenges

Mikrotrans drivers and passengers are still adjusting the use of Jak Lingko smartcards. One such teething problem is that both passengers and drivers were not disciplined in tapping in when boarding and tapping out when alighting. Previously before the introduction of Mikrotrans officers, the smartcard readers were located on the front dashboard, meaning passengers would have to give their cards to the driver to tap in and out, which delays boarding and alighting and inhibited the driver's ability to drive safely (Indahwati, Dewi, & Nurfajriah, 2019).



### 4.3. Impact

The Jak Lingko initiative has allowed the city of Jakarta to make great strides in terms of integrated transport. In line with its mission the Jak Lingko initiative has realised a transportation service that is integrated; that harness information technology; improved the transport environment and service quality of microbus services and enhanced fare affordability for the public.

The benefits of fare integration include increased convenience for users making multimodal trips as one fare is charged through the same card for all legs of the journey. Since payments for all modes are made before boarding, there is a level of assured income for transit operators with reduced risk that users will default on subsequent modes and faster transfers at stations, which improves the quality of the service especially at high volume stations in the peak period (Hulu and Kusuma, 2020). An added benefit of the smartcard is that it can be used in convenience stores to buy non-transport products which may appeal to low income users who prefer more financial liquidity to use their income for other purposes. However withdrawals cannot be made from the Jak Lingko card (Hulu and Kusuma, 2020).

**The Power of Microbuses as Feeder**

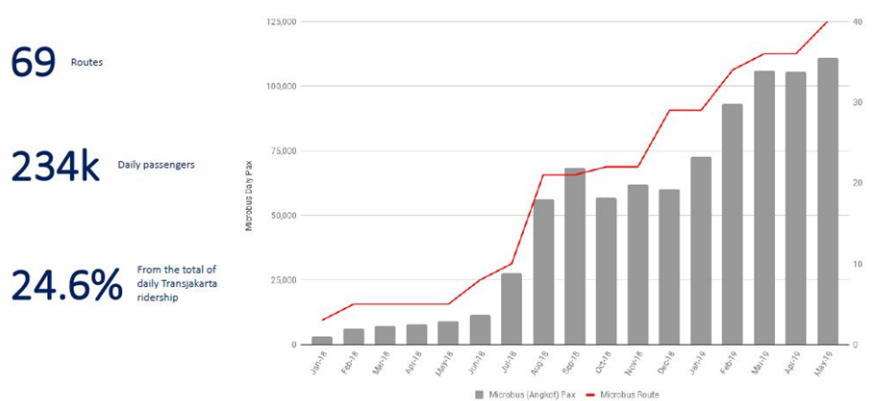


FIGURE 15: IMPACT OF MICROBUS FEEDER SERVICE

Source: (Adiwinarto, 2020)

Figure 15 illustrates the growth in use of the Mikrotrans feeder bus service with every route added to the network (Adiwinarto, 2020). The Mikrotrans users account for 24.6% of the Transjakarta BRT daily users indicating an uptake in multimodal travel likely facilitated by fare integration and e-ticketing. The partnership between the microbus and BRT service has significantly increased access to subsidised transport for the residents of Jakarta with 83% of

residents enjoying access to the Transjakarta services within 500 meters. This is a significant improvement especially for those residents on the urban periphery whom now have better access to a fast, affordable and reliable service to the urban centre (See Figure 16) (Adiwinarto, 2020)

**2015 – Luas Jangkauan Layanan Transjakarta  
Mencapai 280,5 Km<sup>2</sup>**



**2018 – Luas Jangkauan Layanan Transjakarta  
Mencapai 438,8 Km<sup>2</sup>**

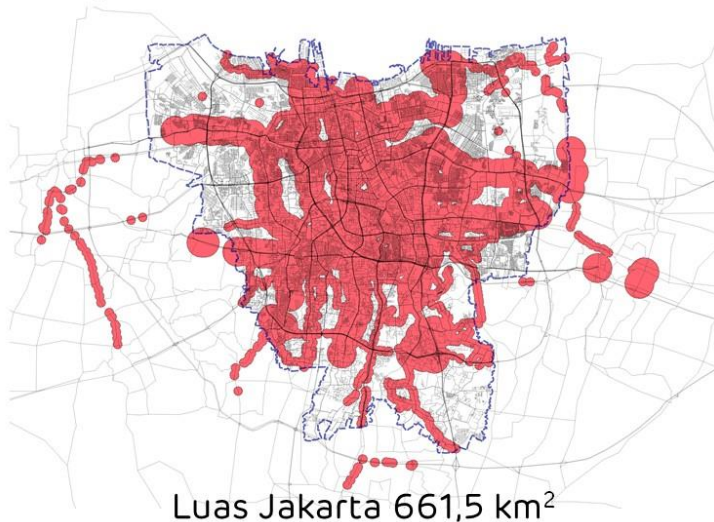


FIGURE 16: TRANSJAKARTA SERVICE COVERAGE FROM 2015 TO 2018

Source: [www.transjakarta.co.id](http://www.transjakarta.co.id) (2018)

In terms of affordability, a customer survey revealed that 84% of Transjakarta users felt satisfied with the price of fares and affordability had the highest satisfaction rate compared to other criteria (See Figure 17 – “Aspek 3”).

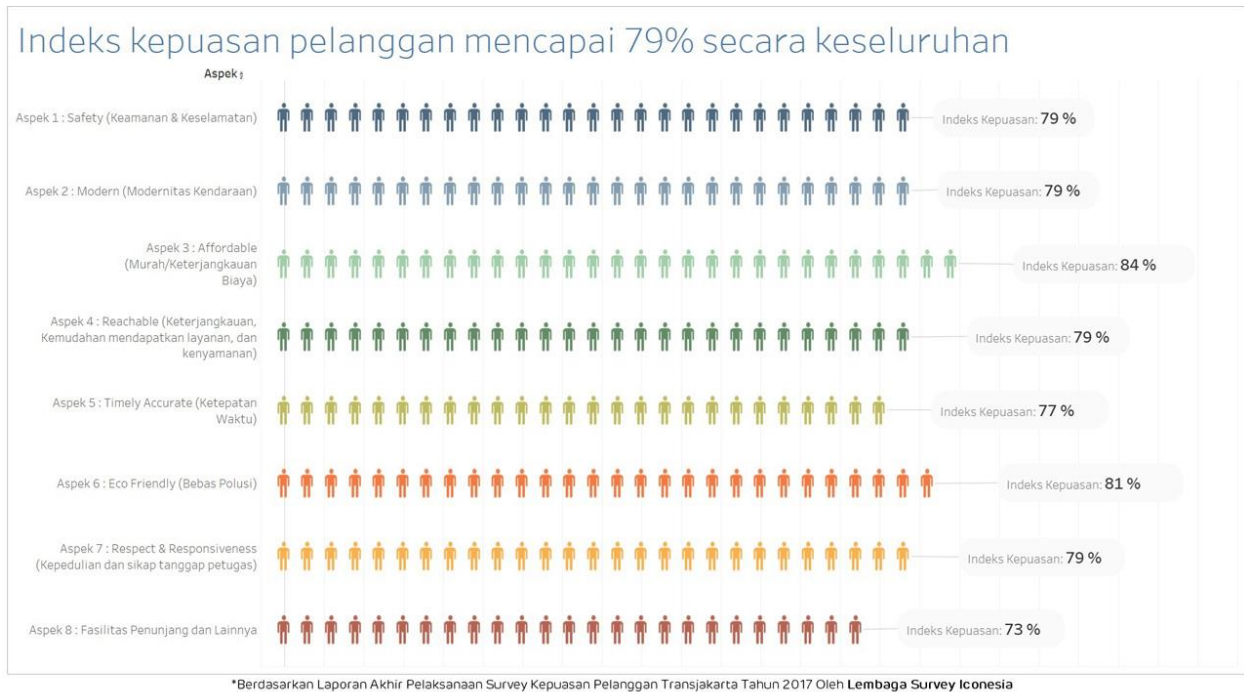


FIGURE 17: TRANSJAKARTA CUSTOMER SATISFACTION INDEX (2017)

Source: [www.transjakarta.co.id](http://www.transjakarta.co.id) (2018)

Finally, the formation of microbus co-operatives and opportunities to work as contractors with a major transport agency like PT Transjakarta lays the foundation for greater efficiency and formalisation of the microbus industry, economic empowerment of small to medium enterprises, better working conditions for drivers and higher quality user experience for passengers.

Implementing both fare integration and modal integration between the paratransit microbus system and the formal BRT system has enhanced affordability by reducing the overall cost of multi-modal journeys; increased ridership and social impact of the Transjakarta BRT service and improved the quality and value of the microbus service.

## 5. Reflection

If a programme similar to the Jak Lingko initiative was to be implemented in Cape Town it would need to speak to the realities of the transport landscape in Cape Town as well as the themes that emerged from the survey of Organising for Work members. These include limited government resources, stakeholder co-operation, addressing access to subsidised transport services, grappling with how transport disadvantage affects work-related trips and what can be learnt about how low income communities travel.

### 5.1. Survey Findings

The results of the data revealed the diverse attributes of the sample group in terms of age, employment, perceptions and income. However what is common about the group are the experiences of transport and social disadvantage as described by Lucas (2011) (See Figure 1). The forms of transport disadvantage present in the sample include lack of car access, poor public transport services and high travel costs. The social disadvantages experienced include low incomes and unemployment.

These disadvantages are evidenced in 6 out of 7 respondents residing in areas of Cape Town that have limited access to subsidised transport services such as Khayelitsha, Mitchell's Plain and Langa. When two respondents were asked why they had not used the MyCiTi BRT, one respondent mentioned

*"[the MyCiTi bus is] not in my area of work"*

*– 35 year old male, earning R8,001 -11,000/month, works in Parow*

Another respondent mentioned that

*"There's no myciti bus [in] Langa".*

*– 30 year old female, earning R2 501 - R3 500/month, resides in Langa*

These respondents also expressed favourable views of the MyCiTi service, respectively saying that they thought

*"It's very comfortable way of transporting people there are no politics or traveling problems"*

*– 35 year old male, earning R8,001 -11,000/month*

*“When I look at it I think it’s comfortable and great transport to use”.*

*– 30 year old female, earning R2 501 - R3 500/month*

The latter respondent also mentioned that if the MyCiTi service was close to her area, nothing would prevent her from using it, indicating an appetite for these services but poor service coverage. A feeder service such as the one seen in the Jakarta may offer a potential solution to connecting residents to subsidised transit services.

In terms of respondents experiencing low incomes and high travel costs as form of disadvantage the following was found. Firstly, in order to provide a recent and context specific definition, the Cape Town Urban Development Index (2019) defines low income as those earning a personal income less than R4 640 per month which matches the description of four respondents in the sample, two of which are unemployed and one who is casual worker, making them particularly vulnerable to travel expenditure shocks. A fare concession group for low income and job seeking transit users would therefore benefit this group.

When the sample group was asked about absolute transport expenditure on a recently made work-related trip, the responses varied between R22,00 and R69,00. This was the cost range for round trip journeys where the cost positively correlated with the number of vehicles used meaning that the farther a respondent travelled, the more transfers and costs that would be incurred.

When respondents were asked the reasons why they used the chosen mode for this work-related trip, the data revealed that this decision was often times and not based on cost. Most often, this decision was influenced by 1) physical proximity to home or destination; 2) the mode which offered the shortest travel time; followed by 3) lowest cost. With most respondents having used a minibus taxi for this work-related trip, this insight about mode choice may imply that respondents do not have the luxury of choosing mode based on price but rather have to choose a based on other reasons and shoulder the costs that come with that.

Regarding the cost-saving strategies used by the respondents a larger sample could have assisted in discerning which strategies held statistical significance among the diverse options offered. The strategies used by the unemployed respondents were to travel less frequently, to use a cheaper mode such as the train, or use only one mode of transport. Among the employed respondents not travelling was usually not an option and their strategies involved making use

of travel discounts, sharing costs in a lift club or using fewer modes of transport. In both the employed and unemployed groups the latter strategy speaks to travel cost being positively correlated with the number of vehicles used, with one respondent sharing that they travel early in the morning when there is a direct taxi to their destination, whereas later in the day they would have to use two taxis. These sentiments although practical may prove challenging to overcome in promoting multimodal travel in an integrated transport system.

Five out the seven respondents mentioned that they have had to cancel or postponed a work related trip. Most often this was a trip to a job interview, followed by looking for work and finally commuting to work. The most common reason cited for not making these trips was cost or not having enough money, with one respondent sharing that he did not go to an interview because

*“It was far away and I had no money.”*

*– 30 year old male, unemployed.*

It should be noted that wealthier respondents, earning between R8 001 – R11 000 per month, have also had to cancel work related trips but not due to cost, rather they cancelled their trips because the journey would require too many changes, indicating an aversion to multimodal travel. Seamless fare and modal integration coupled with fare caps as seen in Jakarta have the potential to mitigate against concerns about multi-vehicle journeys.

## 5.2. Affordability

In addition to understanding the impact on individuals, another consideration is how a transport initiative such as Jak Lingko would interact with Cape Town's broader transport planning and policy landscape.

According to the City of Cape Town (CoCT) Urban Development Index (UDI) it was expected that the employed respondents from Organising for Work would spend between 15% and 22% of their personal income directly on transport expenses based on the areas they reside in – still far above the 10% goal referred to in the *White Paper on National Transport Policy of 1996*.

What the survey found was that 3 out of the 5 employed respondents surveyed spent less than what was expected for their area according to the UDI, but only 2 out of 7 spent less than the 10% national benchmark leaving much to be desired (Table 2).

TABLE 2: DIRECT COST EXPENDITURE AS PER CAPE TOWN UDI

Residential area (as per UDI)	Monthly income group	Monthly expenditure (trips to work)	Actual direct cost ratio of OFW respondents <sup>6</sup>	Direct cost ratio of monthly income per area (UDI)
Epping Industria	(income withheld)	R0 <sup>7</sup>	n/a	15%
Langa	R8 001 - R11 000	R440	5%	18%
	R2 501 - R3 500	R560	22%	18%
Mitchell's Plein (North)	R8 001 - R11 000	R560	7%	22%
Khayelitsha (North)	R1 001 - R1 500	R140	14%	22%

When considering the travel expenditure of the unemployed, their circumstances are worsened by having to borrow money from family and friends, thereby going into debt in order to travel. Of the two unemployed respondents, the first respondent spent R56,00 on a 42.2km round trip using 4 minibus taxis and the second respondent spent R26,00 on a 26.2km round trip using 2 minibus taxis. For both trips a minibus taxi was used because the respondents cited the minibus taxi would get them closest to their destination which deviates from the assumption that they would use the cheapest mode.

<sup>6</sup> Based on trip, income and residential data provided from employed OFW respondents

<sup>7</sup> Respondent walks to work

The Jakarta case has provided some insights to how public transport restructuring can provide cheaper public transport costs and benefit many urban residents with low incomes. A key lesson from Jakarta is that a broader view of concessionary groups should be considered, to include the indigent, the unemployed and potentially sector-specific workers, veterans and social housing residents.

The Cape Town Comprehensive Integrated Transport Plan for 2018-2023 considered an indigent transport fare for the MyCiTi BRT, indicating an appetite to expand fare concessions to wider group of beneficiaries in the local context. It should be noted that fare concession groups are constrained by the budgetary and welfare environments of the state and the number of people they can sustainably support. A more targeted and incremental approach to fare concession groups may be more appropriate in Cape Town – such as focusing on trips which start in low-income areas for instance – compared to the broad and extensive model adopted in Jakarta.

Another consideration is that of sporadic travel patterns where some users only travel on occasion, meaning that passengers may prefer only to buy tickets as and when required. Fortunately, a fare cap such as the one implemented in Jakarta means that occasional transit users are not disadvantaged when buying once-off tickets, as they will never pay more than the equivalent-cost of a travel package. A fare cap policy is likely to be valuable to 3 out the 7 respondents from the survey who said they only travelled occasionally, when making job-seeking trips two to three times a week.

### 5.3. Ticketing

A barrier potential to using Jak Lingko-integrated public transport services is that all payments are processed via e-money which can exclude passengers who do not use e-money. This may be in part due the lack of public participation during the planning phase of the programme<sup>8</sup>. The e-money feature of the Jak Lingko initiative may prove problematic in the Cape Town context due to 1) the low uptake of mobile money generally 2) a preference for cash by minibuss taxi operators and 3) a poor culture of cashless transacting in the South African economy, especially among the unbanked population (J Serrao, L Jansen van Vuuren, 2019; Schalekamp

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<sup>8</sup> Indahwati R, Jakarta based transport researcher, personal communication, August 3 2020



et al., 2017). However an interoperable and electronic ticketing system is essential as a means to achieving fare integration.

Kash and Hidalgo (2012) note that fare standardisation and e-ticketing can sometimes have negative effects on low-income passengers. Since Jak Lingko is an electronic system it cannot be easily tampered with, offering passengers standardised and impartial fares. It was found that in Columbia TransMilenio BRT system's automated fare system prevented the possibility for poorer passengers to negotiate fare discounts, as was a common occurrence with Bogota's paratransit bus operators (Venter et al., 2018). This was also true for one respondent in the OFW sample in Cape Town who mentioned that she usually rides free of charge on a minibus taxi from home to a nearby taxi rank.

The City of Cape Town has shown interest in intermodal integrated ticketing however, the challenges associated with implementing an initiative similar to Jak Lingko in Cape Town have been noted in the Comprehensive Integrated Transport Plan (CITP) for the City of Cape Town. These include:

- High capital costs to provide fare validation equipment on all Golden Arrow buses and minibus-taxis
- The Department of Transport's fare system regulations do provide a means to split revenue to different operators – however, specialist streams within Cape Town transport authority and the national department are reportedly working on this item. In the Jakarta this responsibility was outsourced to the PT Transjakarta Company as it had cultivated the necessary competencies in the running of the BRT system for several years. For Cape Town, in the absence of such an entity the government department will need to build this capacity.

#### 5.4. Feeder service integration

A common practice during the integration of transit services is the removal of redundant services along a transit corridor to encourage symbiotic operations between them (Miharja and Priadi, 2018). In many developing nations with strong paratransit systems, the prospect of integration with a more formal scheduled transit service is often poorly received as it can mean a reduced service area, income and employment insecurity for drivers and reduced ownership

opportunities of the industry (Plano et al., 2020). When the Jak Lingko initiative was first introduced, some microbus operators resisted joining co-operatives, holding protests and demonstrations (Indahwati R, personal communication, August 3 2020).

In Cape Town, there is a high possibility of similar resistance if this approach is adopted. In order to usher in this transition it is important to consider mechanisms that will incentivise co-operation and complementarianism between modes. Meaningful engagement with paratransit operators will be necessary because of the fundamental changes that integration and formalisation will bring to current paratransit business models (Plano et al., 2020).

Transport planning policy can highlight the vehicular advantages that minibus taxis (MBT) have in operating shorter trips (<12km) on feeder routes to support employment protection for the MBT industry and position the minibus taxi as an ideal motorised option for the first mile and last mile of multimodal journeys however these terms should be negotiated so as to not alienate the minibus taxi stakeholders and thus include them in envisioning what integration will look like in Cape Town.

The Jak Lingko approach also suggests, there is an opportunity to build on existing features of the minibus taxi business model in Cape Town. In addition to the driver, many minibus taxis in Cape Town also have on-board 'conductors' who provide passengers with information about the taxi's route and also process payments. The on-board officials in the Mikrotrans feeder services of Jakarta perform a similar role and could provide a model for how to upskill and preserve employment for local conductors.

## 6. Conclusion

The intersection of physical and financial access to transport has been a recurrent theme throughout this paper. The mere existence of affordable, subsidised public transport may benefit some users but does not deal with other constraints such as transport proximity which needs equal attention to make an impact in low-income communities (Venter, 2011). A key statistic that emerged from the Organising for Work sample was that 86% of respondents used the unsubsidised minibus taxi for travel and was always chosen for reasons other than cost. Proximity to public transport has been shown to have a significant influence on mode choice in Jakarta and Cape Town evidenced in corresponding ridership statistics for various transit services. For low-income communities on the urban periphery, minibuses or minibus taxi are

often the only readily available modes of transport. Herein lies an opportunity to use integrated transport planning to bridge the gap between low-income communities and their access to subsidised public transport services like the BRT, train services and potentially minibus taxi as well in future. Fare integration is powerful tool that should be used to overcome the dual problem of distance and travel cost for many low-income communities. However, significant political will, transport planning and investment would be required to implement such a plan.

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