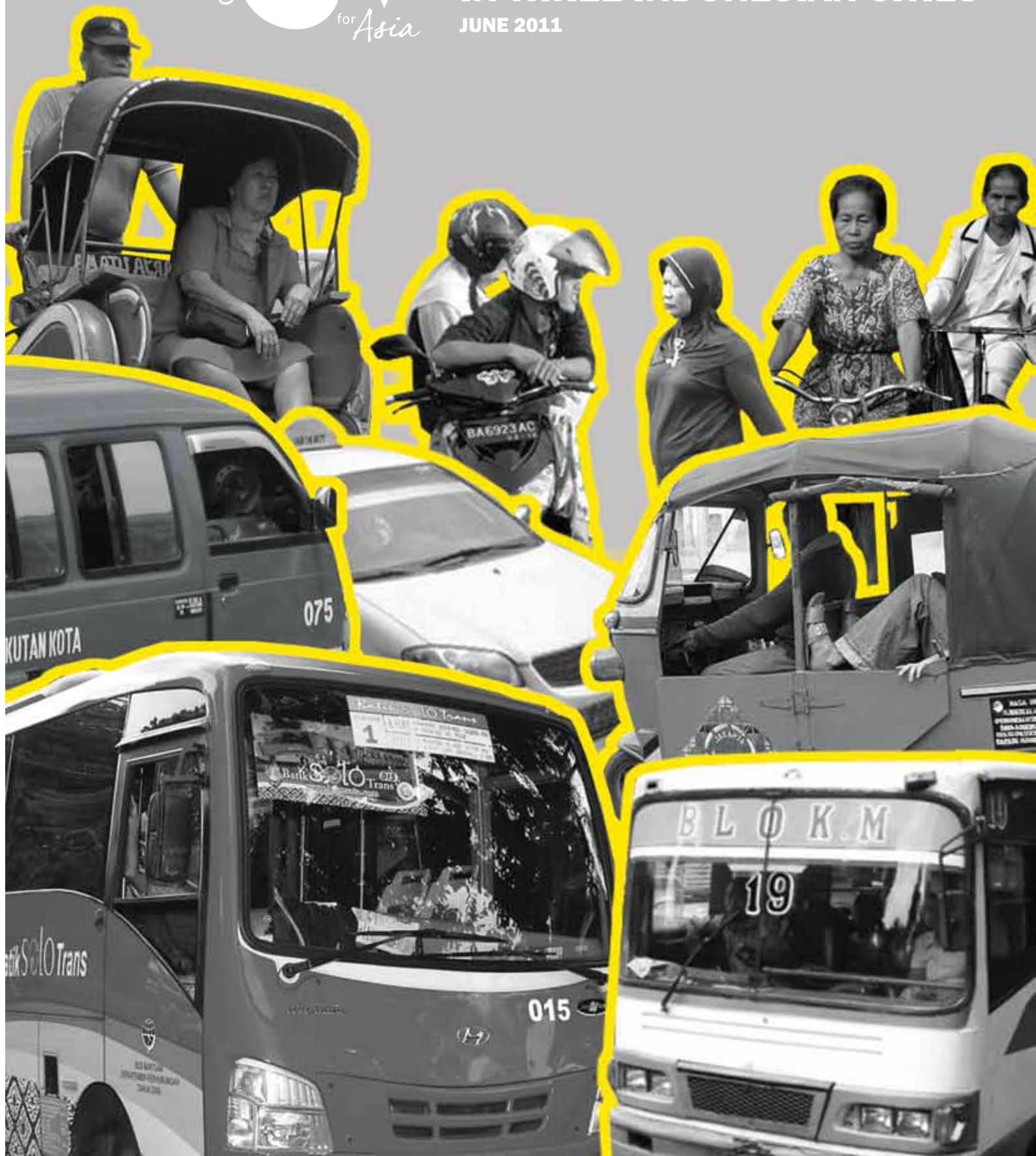




# INFORMAL PUBLIC TRANSPORTATION NETWORKS IN THREE INDONESIAN CITIES

JUNE 2011



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**CDIA** is a regional initiative established in 2007 by the Asian Development Bank and the Government of Germany, with additional support of the governments of Sweden, Spain, and Austria. The Initiative provides assistance to medium-sized Asian cities to bridge the gap between their development plans and the implementation of their infrastructure investments. CDIA uses a demand driven approach to support the identification and development of urban investment projects in the framework of existing city development plans that emphasize environmental sustainability, pro-poor development, good governance, and climate change.

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# GLOSSARY OF TERMS

## ANGKOT

A mini van that is converted to carry passengers.

## BAJAJ

A three-wheeled motorized vehicle used as a taxi.

## BECAK

A non-motorized three-wheeled taxi service.

## CALO

A parking attendant who works with a *pangkalong* to attract customers.

## CDIA

Cities Development Initiative Asia.

## IPT

Informal Public Transportation.

## KELINCI

An articulated motorized vehicle usually used for children, but also for conveying large numbers of people to events locally.

## KETEK

A river taxi.

## OJEK

A motorcycle used to carry a passenger on the back.

## PANGKALAN

A “rank” or gathering place used for *bajaj*, *ojek*, *becaks* and *angkots*.

## PREMAN

A strong man or mafia that controls a certain area and extracts commissions for permission to operate.



### THREE MAIN TYPES OF INFORMAL PUBLIC TRANSPORTATION

*This study focuses on three modes of informal public transportation – the becak (top left), angkot (top right), and ojek (bottom); outside Paser KM5 in Palembang, motorcycles, which are the most common form of private transportation in Indonesia, are crammed in parking areas.*



# EXECUTIVE SUMMARY

## INFORMAL PUBLIC TRANSPORTATION IS AN IMPORTANT PART OF URBAN TRANSPORTATION STRATEGIES

As Indonesian cities today become more prosperous, the demand for mobility among the urban poor is rapidly growing. This is no where more the case than in Jakarta – each day city streets become frozen with congestion. Government efforts to supply public transportation are insufficient at best. Informal transportation providers driving *ojeks* are a common sight weaving among unmoving traffic, simultaneously offering a faster route and contributing to congestion. Growth is also coming to other medium-sized Indonesian cities like Jogja and Solo in Central Java and Palembang in Sumatra – and so is the traffic. Yet while motorized transport is increasing in these cities, the environmental problems of congestion and pollution have not reached the scale of Indonesia’s biggest cities. In fact, as this report describes, informal public transportation offers potential alternatives to the negative stresses of growth on urban transportation systems as well as innovative approaches to provide service to people in poverty.

This report looks at informal public transportation (IPT) from different perspectives and reconsiders its value not just in improving urban mobility, but also as a provider of employment and backbone of the informal economy. In doing so, this report describes how IPT improves mobility in cities by complementing formal transportation systems – but the distinction between the two is often far from clear. Jogja, Solo,

and Palembang are places crowded with people constantly jostling for space on the road, carting goods to market, ambling across traffic on the way to school, and swarming on motorcycles. All of this activity blurs together, but the available modes of transport are very different. Some are regulated and run by the government – formal transportation such as city buses. Others such as *becaks* and *ojeks* are independently run by their owners – informal transportation. To most people, however, the difference between formal and informal may be hard to distinguish because there is such a variety of vehicles decorated in innumerable ways.

As it turns out, this variety is a good thing! On one hand, the options available to people is a sign of how informal public transportation providers seek to complement the services offered by public transportation. On the other, the various ways vehicles look and are used – one *becak* carrying two women while another nearby is loaded with vegetables, for example – shows how IPT providers are innovating strategies to meet the needs of the urban poor. This is particularly important in medium-sized cities like Jogja, Solo, and Palembang. These cities have different kinds of relationships with neighboring municipalities and surrounding villages. Home-based industry is growing at a different scale in Solo and Jogja than it is in Jakarta. In this report we explore how the problems of growth and mobility

# WAYS OF GETTING AROUND...



## POLICY

### PROHIBITIVE

- No licensing process for ojek
- Becak ban
- Phase out of angkot routes

### RESTRICTIVE

*Regulations often unenforced; active policy usually restricts activities perceived as “negative.”*

- Required licenses / cap on becak #s
- Fixed angkot routes
- Vehicle bans

### SUPPORTIVE

- Fixed routes
- Angkot stops
- Promotion through trainings

## INFRASTRUCTURE

### NON-EXISTING

- Few sidewalks
- No bicycling areas
- Most public spaces taken over by ojek parking

### SELF-BUILT

- Signage
- Waiting areas
- Curbs
- Parking attendants

### PUBLICALLY-PROVIDED

- Bus terminals
- Fixed boarding platforms
- Bus stops

in medium-sized cities are simply different from those of Indonesia’s biggest cities – the solutions that are needed are different as well.

## HOW DO WE DEFINE INFORMAL PUBLIC TRANSPORTATION?

Informal public transportation is commonly defined in terms of how it works – especially in the sense of how it does not work like formal transportation. IPT providers lack licenses, their vehicles are unregistered, they pick up passengers in undesignated places, and they do not follow traffic rules. As our team spent time in the streets of Jogja, Solo, and Palembang, observing traffic patterns and interactions among passengers as well as interviewing dozens of drivers, we started to see IPT differently. Our team trained its eyes not on how

IPT works, but rather what it does – especially what it does for the urban poor. This simple shift in how we looked at informal public transportation steered our team towards three general characteristics that we think define informal public transportation:

- 1) IPT is flexible – the drivers accommodate a variety of demands and uses.
- 2) IPT fills gaps – the drivers pick up where formal public transportation networks end and go where formal public transportation coverage is lacking.
- 3) IPT serves niches – the drivers adjust routes, fares, and schedules based on needs of specialized user groups including students, women, informal vendors, and the elderly.

Even though these activities are unregulated (though sometimes they actually are regulated) and some people may perceive the vehicles to be either old-fashioned looking or garish (though often times they are beautiful), this study concludes that by doing these three things, informal public transportation providers create tremendous value for the overall urban transportation system.

## WHAT IS THE SETTING FOR INFORMAL PUBLIC TRANSPORTATION?

Every city in Indonesian is different in terms of the spatial, ecological, economic, and political settings that impact how people access and use IPT. The three cities we studied vary in terms of their size, economy, and regulatory environment. This means IPT carries people for different distances, serves unique markets, and operates within varying legal constraints. What is common to the three cities are two key factors that influence the demand for informal public transportation and how needs are met.

## **MIGRATION AND DECENTRALIZATION OF INFRASTRUCTURE MANAGEMENT ARE KEY FACTORS THAT INFLUENCE INFORMAL PUBLIC TRANSPORTATION IN INDONESIAN CITIES.**

First of all, migration to cities is increasing demand, but the scale of migration that has occurred in Indonesia's big cities has not yet reached Jogja, Solo, and Palembang. And second, decentralization of urban management from national government to municipalities is increasingly placing responsibility for transportation on the shoulders of local leaders. However, local governments do not necessarily yet have capacity to manage these large-scale systems. We found that where there is political will to introduce new technology such as bus rapid transit (BRT), often the financial resources to operate and

maintain large-scale systems is limited - and BRT may not even be serving the needs of the poor. This means cities have to look for alternative solutions.

## WHO ARE THE USERS AND PROVIDERS OF INFORMAL PUBLIC TRANSPORTATION?

Without support or investment from local government, IPT providers have developed an extensive transportation system that serves the specific needs of the urban poor - as well as many in the middle-class - in ways that are flexible and adaptive. Passengers inside *angkots* and *becaks* and on the backseats of *ojeks* are commuters on their way to factories, shoppers going to malls, and students on their way to school and university. Business owners too use informal public transportation to move goods and materials from villages into the city and among the city's many markets. The system works not in isolation of formal transportation - it complements the services of buses and BRT by providing connections to places where public service does not extend. And the places where informal public transportation is available often overlap with formal urban spaces like public bus stops, train stations, city gates, markets, and malls.

The people who drive informal public transportation are particularly sensitive to the needs of the urban poor and develop many ingenious tactics for improving service. Many drivers join cooperative organizations known as ranks or *pangkalang*. The ranks organize themselves in visible public spaces and wear uniforms, making it easier for passengers to access mobility. Members are responsible to the group, so drivers follow safety guidelines like providing passengers with helmets. IPT providers such as *ojek* and *becak* drivers have remarkably high levels of self-organization and this activity works best with assistance from public and private actors such as police, hotels, or other businesses.

Initiatives like these, in fact, come at a very low-cost, but benefit both urban residents and city government.

Yet despite the important role of drivers in the city's transportation system and economy, they actually enjoy very few benefits and receive little recognition for the service they provide. Drivers in the informal public transportation sector have extremely limited employment options. Income differs among *angkot*, *ojek*, and *becak* drivers, but they can expect to earn between Rp. 20,000 and Rp. 90,000 (~ US \$2 to \$9) after a 12- to 14-hour day. Whether drivers own their vehicles and the degree to which the mode is regulated are key factors influencing income. Typically, ownership increases income whereas when there is a lack of regulation of fares, routes, and schedules drivers earn less. *Angkot* drivers fare the

***INFORMAL PUBLIC TRANSPORTATION OPERATES NOT IN ISOLATION OF FORMAL PUBLIC TRANSPORTATION, BUT AS A FLEXIBLE COMPLEMENT TO PUBLIC SERVICES.***

worst – in fact, it is a surprise that their earnings would be lower than *ojek* or *becak* drivers since *angkots* carry more passengers than any other formal or informal mode of transportation.

The experience of informal public transportation providers is discouraging, but we learned from drivers that the value their occupation brings has

to do with more than income. Employment also generates personal dignity and, as we learned through many interviews, drivers believe that government recognition and support will bring more respect to their profession.

**HOW CAN LOCAL GOVERNMENT SUPPORT INFORMAL PUBLIC TRANSPORTATION?**

Drivers and passengers both share the risks of informal public transportation – exposure to air pollution and traffic accidents as well as the ongoing instability of access to transportation services that support livelihoods. With continued migration to Jogja, Solo, and Palembang, these risks may possibly persist at the same time that the role of informal public transportation as a source of mobility and employment for the urban poor rapidly expands. Our report finds that, if successfully harnessed, informal public transportation offers a viable path for cities to solve urban transport needs.

Since local governments lack resources to provide transportation coverage to the entire city, support of informal providers fills gaps and extends the reach of public services. Moreover, informal public transportation – because it is flexible – is better equipped to provide specialized service to niche markets like students and the elderly. However, based on our research for this study, we believe that if local governments take an active role in supporting IPT providers – instead of leaving them alone –, the overall effect will be to improve mobility for the public in general.

Local government can support informal public transportation providers in very simple ways by assisting in the creation of “transportation facilitators.” Developed independently by IPT providers, transportation facilitators are both built and non-physical small-scale strategies to facilitate connections between modes, create accountability to provide good service, and increase safety. Examples include wooden signs indicating where to board, negotiated agreements between driver cooperatives and local businesses to provide service

***WHEN IPT PROVIDERS ARE GIVEN SUPPORT, LOCAL GOVERNMENT CAN FILL GAPS IN SERVICE AND EXTEND THE REACH OF COVERAGE WHEN PUBLIC RESOURCES ARE SCARCE.***

to customers, curbs to designate vehicle parking areas, and helmets provided to passengers.

This is cheap stuff – all of these small investments help to integrate informal public transportation modes into the citywide network and link drivers to strategic locations, thereby increasing income.

**PRINCIPLES FOR MOVING FORWARD**

This report goes on to describe in detail the people who spend their days “on the wheel,” as one driver we interviewed put it. The goal of this study is to identify strategies for improving mobility options for the urban poor in three Indonesian

cities – Jogja, Solo, and Palembang. Far from having to “re-invent the wheel” to meet these needs, our research found that IPT is already providing valuable services to the urban poor (as well as other income groups) by offering inexpensive, flexible modes of transportation. We think a few basic principles – which are elaborated in Section 8 – can guide local governments, development agencies, NGOs, IPT providers, and other actors who are seeking to improve the transportation options available to the urban poor.

First of all, the mobility needs of the urban poor can often be met by harnessing the solutions being created by IPT providers, rather than by introducing new services or technologies. In addition, opportunities to improve services are usually found where IPT complements existing formal public services. Rather than compete for ridership with formal transportation options, IPT providers usually pick up where public services end. Yet formal and informal transportation systems are commonly perceived to be at odds because the connections among them are so poorly defined. Since municipal governments have limited resources to operate and manage transportation systems, initial activities should focus on the small-scale, since this is where IPT operates. And lastly, regulation comes in many forms – IPT providers often regulate themselves given even a minimal level of self-organization and recognition. Local governments, NGOs, and other actors will find that once organized, IPT drivers begin to improve safety and quality of service on their own, even if regulations do not exist or are unenforced.



### FLEXIBLE, GAP FILLING, NICHE SERVING

*One way our team defines IPT relates to how providers often serve niche markets – for example, many becak drivers in Solo transport goods and materials between public markets for vendors.*

# INTRODUCTION

## SECTION 1.0

### DEFINING INFORMAL PUBLIC TRANSPORTATION

## INTRODUCTION

As Indonesian cities grow and more prosperous, motorized transportation use is rapidly increasing. Common consequences of increased motorized transportation are congestion and air pollution.

Despite the best efforts of local municipal governments, such as creating public transportation networks, residents of cities face many different challenges to accessing mobility.

The implications of reduced mobility range from personal inconveniences to widespread constraints on urban economic activity. As an alternative

## ***THE DIFFERENCES BETWEEN FORMAL AND INFORMAL PUBLIC TRANSPORTATION ARE NOT ALWAYS EASY TO DISTINGUISH.***

to private cars and public transportation, many Indonesians access mobility through informal public transportation (IPT) providers. However, informal public transportation is often perceived as the problem – drivers and vehicles both contributing to congestion and pollution.

This report studies IPT from many different perspectives and reconsiders its value not only in improving mobility, but also as a critical support for both formal and informal urban economies.

Where is IPT available? How does it work? Who are the different users and providers of IPT service? Importantly, how does IPT support livelihoods, social networks, and culture for the urban poor?

The report begins by describing a definition of informal public transportation. The intent of providing a definition is to provide a guide for observing and interpreting IPT when we see it in the city. As it turns out, this is not always an easy task since IPT has many forms and modes of operation. Yet a basic definition acknowledges the role of IPT in increasing mobility for urban residents.

The following sections in the report illustrate both contexts for informal public transportation and documents the voices of IPT users and providers.

Section 2.0 describes the “urban setting” of medium-size Indonesian cities, including Jogjakarta, Solo, and Palembang, the study-cities for this report. Medium-size cities have unique structures and economies, which differ from big cities like Jakarta. Section 3.0 provides a detailed overview of different modes, how they are operated, who the drivers are, and their relative advantages and disadvantages. Different modes complement each other as well as the city’s overall public transportation system, which means both formal and informal modes of transportation work together to serve needs.

## KEY MESSAGES

### SECTION 1: INTRODUCTION – DEFINING INFORMAL PUBLIC TRANSPORTATION

- Two key drivers that influence demand for informal public transportation are rapid migration and decentralization of urban management from national government to local municipalities.
- Many definitions of informal public transportation emphasize how it works, but we focus on three things it does: 1) creates flexibility, 2) fills gaps in transportation networks, and 3) serves niche markets.
- It is often difficult to visually distinguish between formal and informal modes of transportation – but this is actually a good thing since variety is a sign that providers are innovating in how they meet the needs of passengers, especially the urban poor.
- Informal public transportation contributes positively to city life and creates value for urban transportation systems.

Sections 4.0 and 5.0 look at IPT from the perspectives of both providers (the drivers and operators of *becaks*, *angkots* and *ojeks*) and users (the people who use IPT daily). Section 6.0 then documents the ways in which IPT is an economic generator – how it creates a supportive infrastructure for informal economic activity and provides a source of employment for the urban poor.

The ways in which local government can address issues such as congestion and increase mobility through the many resources of informal public transportation providers is the topic of Section 7.0. For example, IPT extends the coverage of public transportation networks, connecting potential users with different modes of transportation and providing more localized services. IPT also creates services – such as early-morning and late-night routes – that formal public transportation cannot due to operational limitations. The report therefore concludes by assessing the ways in which formal and informal modes are today integrating and proposing principles for policy makers, planners, and city decision-makers as they contemplate the potential for informal public transportation to become a viable transportation alternative.

## GETTING TO KNOW USERS AND PROVIDERS OF IPT

This report looks at ways in which informal public transportation (IPT) offers paths towards solutions for urban mobility. As our team researched this report, we met many people who in one way or

## **DEFINITIONS OF INFORMAL PUBLIC TRANSPORTATION TEND TO FOCUS ON HOW IPT WORKS – WE FOCUSED ON WHAT IT DOES, FOR DRIVERS, PASSENGERS, AND PUBLIC SPACE.**

another create and manage the transportation system upon which millions in Jogja, Solo, and Palembang depend. The city leaders we spoke with, for example, are working hard to meet demand for public transportation while managing congestion as the urban population rapidly grows. At the same time, drivers of all sorts of vehicles – from *becaks* to *angkots* – are creating ingenious ways to provide low-cost service to the urban poor.

All of these actors face both advantages and limitations of operating either “formal” or “informal” modes of transportation. Yet as our team interviewed



passengers in and on these vehicles, we were surprised to learn that for most the differences between formal and informal are difficult to distinguish. In fact, publicly provided and regulated transit systems and IPT often overlap so much that the definition of one is hard to formulate without referencing the other.

Take for example a few stories of drivers and passengers we met on the road. These “characters” are composites of many people we interviewed who shared their common experiences of IPT – and we’ll return to them throughout this report:

- Each morning in Palembang, a 29-year old *angkot* driver named Budiyo wakes up at 5 a.m. and drives his minibus to the Ampera Bridge by the River Musi. There he picks up passengers at an *angkot* stand and then drives a fixed route around Palembang, returning to the Ampera Bridge many times during his 13-hour shift. The route is determined by the city, but Budiyo makes up the stops, picking up and dropping off passengers wherever he finds them.
- At about the same time in Solo, a 57-year old *becak* driver named Supriyanto arrives at Pasar Gede, a major market, with his pedicab piled with sacks of potatoes. He is a farmer from a nearby village and is selling his goods to a familiar vendor. Afterwards, he will stay in Solo for a week or so working as a driver and sleeping at night in his *becak*. He moves between the village and city like this several times a month.
- In Jogja, another city close to Solo, a 19-year old university student named Farikah steps off the intercity train at Tugu station and finds a group of *ojek* drivers waiting in the parking lot outside. The driver weaves through traffic towards a neighborhood of student boarding houses. The streets here are too narrow for an *angkot* and the district is not served by public bus.

Over the course of their journeys, Budiyo, Supri, and Farikah each set foot in spaces of both formal

## PAK TAUFIK

25-year informal food vendor who works under the Ampera Bridge in Palembang



### BRT NOT USEFUL FOR VENDORS

“Poor people would think twice to use Trans Musi. The buses look pretty luxurious and will not transport our fruits and vegetables to the market.”

and informal transportation for a variety of reasons. All three have at least two things in common – they are seeking to move around at little expense and to do so in a highly flexible way. Farikah, for example, does not have a lot of money to spend, but even so she obtains door-to-door service. These two needs – low-cost and flexibility – are often at the root of how and why informal public transportation services are created.

With growth in many Indonesian cities comes increased congestion and constraints on mobility. In Indonesia’s largest city, the capital Jakarta, short-distance trips may take up to an hour to complete and travelling across town during the daytime is nearly impossible. Formal public transportation often appears unequipped to handle the demands of millions of commuters.

In most Indonesian cities public transportation is minimal since local governments have yet to make adequate investments in infrastructure and are still building the management capacity to operate complex transportation systems. This leaves gaps in service and unmet needs, which for informal public transportation providers are opportunities to offer transit solutions for people on the move.

Informal public transportation provides benefits to Indonesian city residents because it is a practical and low-cost alternative when and where formal

public transportation is limited. Just as importantly, IPT provides an alternative to private motorized transport, which is increasing rapidly in small, medium, and large Indonesian cities. Private motorcycles, for example, account for 70% of vehicles on the roads in Jakarta. Yet *angkots* carry many passengers in a small vehicle, offering an option that reduces the number of vehicles on city roads. Informal public transportation also supports the informal economy, generates employment, and provides a range of transportation options that increase mobility in Indonesian cities.

## KEY DRIVERS OF INFORMAL PUBLIC TRANSPORTATION

Two large-scale development patterns – migration and decentralization of government – are placing new pressures on transportation systems in Indonesian cities. As a result, municipal governments, development agencies, and NGOs are all seeking ways to meet the growing demand for

### ***IPT DOES THREE IMPORTANT THINGS: IT IS FLEXIBLE IN USE AND AVAILABILITY, IT FILL GAPS IN PUBLIC TRANSIT COVERAGE, AND PROVIDES SERVICE TO NICHE MARKETS.***

transportation service, especially among people in poverty. An important first step is to understand the key drivers in order to define and recognize what IPT has to offer and why as cities grow, so does IPT.

#### RAPID URBANIZATION CREATES DEMAND

City governments are working to manage public transport systems in a way that is environmentally sustainable and meets the needs of people and the urban economy. However, migration to cities easily overwhelms public systems because more people means more demand for transportation. When automobile ownership is also high, migration

contributes to increased congestion and pollution – as is the case in Jakarta. One reason why informal transportation is growing in many cities is because demand is not met by publicly provided transportation.

However, Jogja, Solo, and Palembang are mid-sized with different migration patterns than Indonesia's biggest cities. First of all, their populations are much smaller – between 500,000 and 1 million compared to over 8 million in Jakarta. Also, the high levels of rural-to-urban migration that led to rapid urbanization in Jakarta have not been reached in the three cities in this study. Overall, the Indonesian population is still 57% rural. That is high compared to the United States, which has about the same population, but is only 21% rural. (1) This means that the kind of rapid migration that will increase demand for transportation is very likely yet to come to Jogja, Solo, and Palembang.

#### DECENTRALIZATION INCREASES LOCAL RESPONSIBILITY TO MEET DEMAND

Local governments are increasingly responsible for providing and managing public services. In Indonesia, decentralization following the reforms of 1998 have shifted responsibility for implementing urban policy from the national government to local municipalities. However, many cities have yet to build the level of municipal revenues needed to manage and operate urban systems. This has especially been the case with large-scale transportation systems and bus rapid transit (BRT), which has been introduced in cities where the capacity to effectively operate BRT is partial at best.

These twin “drivers” of informal public transportation – migration and decentralization – are common to most Indonesian cities and especially instructive for this study of Jogja, Solo, and Palembang. On one hand, migration will be a challenge for local governments as they manage urban transportation

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(1) U.S. Census, [globalhealthfacts.org](http://globalhealthfacts.org), [mongabay.com](http://mongabay.com)

## CASE STUDY

### HOW DRIVERS FIND NICHE TO SERVE – JOGJA

One successful strategy for drivers to secure income is to form a relationship with a local businesses. In Jogja, one *becak* rank provides exclusive service to guests at Hotel Ibis in the central tourist area. This rank is one of 25 in Jogja and half of Jogja's 10,000 *becak* drivers work in the central city. Competition is high since *becak* drivers locate wherever there is activity – markets, cafes, and malls. The Hotel Ibis rank competes by serving a single niche group of users, but there are other benefits that come with organization. The hotel provides English lessons as well as etiquette instruction to improve interactions between drivers and guests. In addition, drivers receive a bonus at the end of the year if they stay with the rank. Hotel



*Becaks of the Hotel Ibis rank – with advertisements painted on their sides – line up outside the hotel.*

Ibis has advertisements painted on the sides of *becaks*. There is verbal support from government, but these partnerships are typically facilitated without public resources.

systems in response to growing demand. On the other hand, the level of financial and technical capacity may not be readily at hand among local governments in the short-term, so new alternatives to large-scale public systems may be needed.

### THREE IMPORTANT CHARACTERISTICS OF INFORMAL PUBLIC TRANSPORTATION

As the stories of Budiyo, Supri, and Farikah illustrate, informal public transportation takes varied forms and has many uses. IPT is far more complex and dynamic than the often negative and generic terms in which it is perceived – old-fashioned, slow, dirty, a nuisance in cities that are trying hard to modernize and develop. Yet because it is complex, academic definitions often focus on the less visible details of how it works in comparison to similarly complicated regulated systems. These definitions are useful, but often difficult to apply on the ground in ways that are meaningful to the urban residents who use IPT most often.

The research in this study led our team to focus not so much on how IPT works, but on what it does for drivers, passengers, and urban space. We identified three important characteristics: flexibility, filling gaps, and serving niches. Given the scope of this study, we focused on three modes: *angkots*, *ojeks*, and *becaks*.

#### COMMON ACADEMIC DEFINITIONS

In the academic literature, informal public transportation is typically defined in terms of regulation or technology. It is generally agreed that informal transportation providers lack, to some degree, official credentials, insurance, or permission. (2) They also tend to have less political leverage and access to capital. Another way to define informal public transportation is to focus on individual transit technologies, such as motorcycles

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(2) Cervero, R. (2000). Informal transport in the developing world. United Nations Publications; Cervero, R., & Golub, A. (2007). Informal transport: A global perspective. *Transport Policy*, 14(6), 445-457. doi:10.1016 / j.tranpol.2007.04.011

and minibuses, rather than credentials. (3) Vehicles can further be classified according to passenger capacity, routes, schedules, and service coverage.

A general definition that is commonly used is transport that is available for communal public use, but is in some way unsanctioned by the public sector. In addition, it is typically recognized that – like the informal economy in general – informal transit often provides significantly more services and jobs for citizens than its formal counterparts, whether publicly provided transit or private cars.

### INFORMAL PUBLIC TRANSPORTATION IS FLEXIBLE

A first defining characteristic of informal public transportation is that it is flexible. This is the case for both users of IPT and providers. In terms of use, availability and location, flexibility makes IPT an accessible source of employment for providers and an attractive service for users.

For users, IPT is flexible because it provides more than just a ride. Vendors often use *ojeks* and *becaks* to transport goods between markets. Similarly, residents we interviewed said they prefer using *ojeks* and

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(3) Vasconcellos, E. (2001). *Urban transport, environment, and equity: the case for developing countries*. London, UK; Sterling, VA: Earthscan.

*becaks* to crowded buses for shopping. Informal public transportation is also available during times when public services shut down. *Ojeks*, in particular, can be commissioned by mobile phones, whereas passengers always have to wait for the bus. *Angkots*, *ojeks*, and *becaks* all can offer more customized service, either going where public buses do not or even to a passenger's front door.

For drivers, IPT is flexible, but within limits. Vehicles may also be used for other functions than public transportation. An *ojek* driver may use his motorcycle in a second job with a delivery service or as the family vehicle on days off. Drivers often work on a fixed schedule, but often become drivers when they become unemployed or cannot find other employment. IPT offers drivers flexibility to pursue other job opportunities as formal employment comes and goes. Lastly, drivers also usually operate in a particular area of the city, but because they do not have fixed routes, they can make adjustments and locate where demand for transportation is greatest.

### INFORMAL PUBLIC TRANSPORTATION FILLS GAPS

Informal public transportation also goes to areas of the city that formal public transportation often does not reach. These spatial “gaps” in public transportation



### NO STANDARD “LOOK” OF INFORMAL PUBLIC TRANSPORTATION

An example of how it is often difficult to distinguish between formal and informal transportation are *angkots* in Palembang – though most have a license, each driver decorates the vehicle differently. While on some routes vehicles are identical, on others there is variety.

coverage have to do with municipal boundaries, the physical characteristics of streets in Indonesian cities, or a basic lack of service.

In the first case, we found in all three cities there are high levels of movement across municipal boundaries – either from the center city to a neighboring municipality or from the city to surrounding villages. Public service does not extend beyond the center city boundary, so passengers often switch modes at city gateways to continue their trip. Additionally, there are many areas of the city that public transportation simply cannot reach due to the narrowness of streets in neighborhoods. In both of these cases, informal public transportation provides what is known as “last mile” service, which means that passengers ride one mode as far as it goes and then switch to another to complete their journey.

Informal public transportation also fills gaps in areas where public service coverage has never been extended or from new activity centers that lack a connection to public transportation. *Ojeks* and *angkots* are easy to find, for example, at new shopping malls where there is no public bus stop. In these cases, IPT responds to demand that the public sector does not fulfill by connecting areas of the city without coverage and people who lack service.

### INFORMAL PUBLIC TRANSPORTATION SERVES NICHES

A last defining characteristic of informal public transportation is that it serve niches. Niches are a specialized group of people who share a particular demand based on destination, use, or time. Our research found that informal public transportation providers often make adjustments in schedule or rate to better serve niche groups. For example, university students in both Jogja and Solo are major users of informal public transit. *Angkot* drivers have in response extended service into the city districts with student boarding houses. Informal public transportation also serves passengers traveling late at night after public services are shut down. This is particularly the case near the train stations in all three cities.

## WHY DEFINING INFORMAL PUBLIC TRANSPORTATION IS IMPORTANT

Our definition of informal public transportation by necessity has a lot of grey area, but one thing is certain – informal public transportation has been creating mobility options for years and is here to stay, especially as Indonesian cities continue to grow through migration. Common definitions of informal public transportation are often limited, focusing on how IPT undermines regulatory structures, dodges permit systems, and causes congestion and pollution. But these definitions create barriers to tracking the tremendous social and economic value informal public transportation contributes by supporting livelihoods, providing jobs, and connecting the education system to the city.

Developing an understanding of the three key things informal public transportation does – creates flexibility, fills gaps, and serves niches – has several implications for how we perceive and value its providers and users:

- The distinction between formal and informal transportation is difficult to distinguish – and that is a good thing.

Sometimes government buses are painted with murals, play loud music, and drive erratically. At the same time, informal transport may be well-organized – the drivers wear uniforms and address clients politely. There is no standard “look” and the distinction is anything but clear. But these visual contradictions are also signs of how informal providers are innovating new ways to address new demands.

- Perceptions and attitudes about informal public transportation support how IPT is valued as something that serves the public interest.

Our team observed that in most cases informal public transportation providers complement, rather than compete with existing public transportation when they fill a gap or serve a niche. However, these valuable contributions are

overlooked when negative perceptions portray informal public as clogging up the roads and being too slow.

- The positive things that informal public transportation does are the building-blocks of a more efficient public transportation system.

When informal public transportation is defined in terms of how it undermines official regulations or only in terms of its negative impacts, it is more likely that cities will develop exclusionary policies toward IPT providers. Yet doing so is a missed opportunity to integrate the important services IPT creates into the overall urban transportation system.

## CITY SCALE COMPARISON



|                      | JOGJA   | SOLO    | PALEMBANG   | JAKARTA     | SURABAYA    |
|----------------------|---------|---------|-------------|-------------|-------------|
| AREA (KM2)           | 33      | 44      | 103         | 663         | 663         |
| E-W LENGTH (KM)      | 9       | 11      | 30          | 35          | 10          |
| N-S LENGTH (KM)      | 10      | 12      | 25          | 30          | 16          |
| POPULATION           | 388,000 | 503,000 | 1.6 million | 9.5 million | 2.7 million |
| DENSITY (POP. / HA.) | 150     | 136     | 36          | 144         | 74          |

Sources: wikipedia.com, BPS, kominfo.com

# THE URBAN ENVIRONMENT

## SECTION 2.0



The structure of transportation systems and the way they work is influenced by four important urban settings: spatial, ecological, economic, and political. Not all cities have the same transportation demands and issues and this is especially true of the three cities in this study. This section describes several characteristics of Jogja, Solo, and Palembang – including historic urban and environmental development patterns, distribution of employment centers, and regulatory environments – that are important to consider as we analyze informal public transportation in each city. While we found that sheer population is a crucial factor since population determines the number of people using the transportation system, just as important is how the unique physical form of each city effects how people move through Jogja, Solo, and Palembang.

### MID-SIZED CITIES VERSUS BIG CITIES

A first difference among the three cities concerns size. Whereas Jogja and Solo are mid-sized cities with populations between 350,000 and 500,000, Palembang has three times as many people as Solo. The population of all three increases each day as people come into the city for employment. Jogja and Solo are both small, compact cities with high population density. In contrast, the land area of Palembang is much larger and, as a result, the population density is lower. So, Palembang has more people that need to move around a larger physical area, but even so, these cities are small in comparison to the biggest cities in Indonesia – Jakarta and Surabaya.

## KEY MESSAGES

### SECTION 2: THE URBAN SETTING

- Jogja, Solo, and Palembang are dense and compact mid-sized cities with different kinds of transportation demands than Indonesia's big cities like Jakarta.
- The regional context of neighboring municipalities and villages and the form of local ecologies influences how people are moving through Jogja, Solo, and Palembang and accessing informal public transportation.
- Informal public transportation has an important role in small-scale and home-based livelihoods of people in poverty.
- The political trend favoring new technologies like bus rapid transit (BRT) does not necessarily meet the needs of the urban poor.

The scale of transportation in the big cities – in terms of both physical distances and numbers of passengers – is much larger than in the cities in this study. Jakarta and Surabaya are national economic centers with toll roads, office tower districts, and international ports. This is important to acknowledge since even though public transportation systems in the big cities are more developed and expansive, the demands for transportation in mid-sized cities are different. Mid-sized cities have lower populations, fewer vehicles on the roads, and different sorts of goods moving through their economies. In addition, Jogja and Solo have higher population densities, which means homes, shops, and employment centers are much closer together.

### SPATIAL AND ECOLOGICAL SETTINGS

We found that historic origins of urban development resonate today in regards to physical road types, important routes, the relationship of each city to its regional context, and potential impacts on the natural environment.

#### URBAN DEVELOPMENT PATTERNS INFLUENCE THE KINDS OF JOURNEYS PEOPLE TAKE

Jogja, Solo, and Palembang each have unique urban structures, which result from the different historic

periods during which the cities developed. Jogja has a “hub-and-spokes” pattern – all important functions such as markets and government institutions are located centrally. Major arterial roads radiate from the center and connect to a ring-road around the city boundary where many universities are located. In contrast, Solo has a “polycentric” pattern – important centers including historic monuments and new shopping malls are distributed evenly throughout the city.

### ***JOGJA, SOLO, AND PALEMBANG ARE MID-SIZED CITIES WITH A DIFFERENT KIND OF FORM THAN MEGACITIES LIKE JAKARTA – TRANSIT NEEDS ARE THEREFORE ALSO DIFFERENT.***

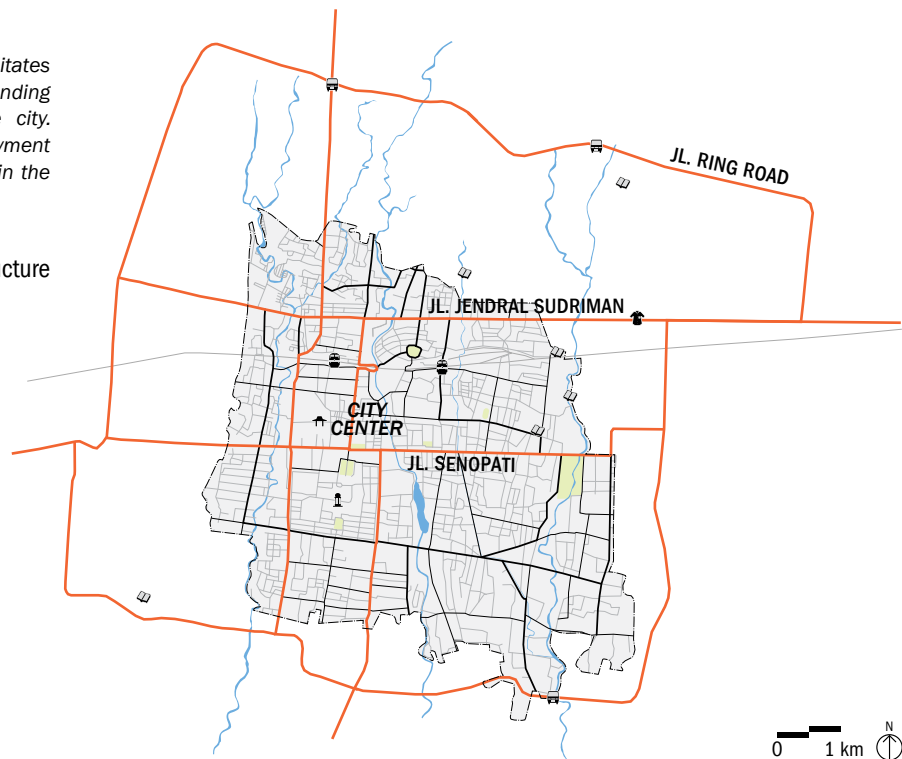
Jogja and Solo are extremely old cities that developed around royal courts so historically settlements were located as close as possible to the royal palace known as a Kraton. Both cities are dense and compact with many narrow roads. Yet whereas in Jogja there are always people moving from neighborhoods and the periphery to the center, in Solo movement is more concentrated within specific districts where people both live and work.



## JOGJA – “HUB AND SPOKES” CITY

The road network in Jogja facilitates movement from the central city to surrounding neighborhoods and the edge of the city. Many of the city's important employment and activity centers are located either in the center or around the city boundary.

- Key Streets that Define City Structure
- Arterial Street
- Collector Street
- Local Street
- ⋮ Municipal Boundary
- 🚉 Train Station
- 🚌 Bus / Mini-bus Station
- 🏪 Market
- 🏬 Mall
- 🏛️ City Palace
- 🎓 University



Palembang is a newer industrial city with a “linear” pattern. It has a major arterial road named Jalan Jenderal Sudirman that bisects Palembang in a north-south direction. The city’s many neighborhoods and factory districts are located east or west of Jalan Jenderal Sudirman so the highest levels of traffic occur on this single road.

### RIVERS PROVIDE LOCAL CONNECTIONS WITHIN THE CITY

The rivers in Jogja, Solo, and Palembang also influence how the transportation network is organized. In Jogja and Solo, collector roads are usually located along the riverbanks and so the rivers form important connections among neighborhoods and city districts. In Palembang where there is more water-based economic activity, the Musi River is an important route for transporting goods and materials as well as for public transportation – water-taxis provide connections between riverfront neighborhoods and the city center.






The ecological setting is important to acknowledge because both formal and informal public transportation may have negative impacts on the environment. Busy roads form barriers between residential areas and riverbanks, thereby becoming hazards to cross. While vehicle emissions increase air pollution, fuel run-off on roads reaches rivers, which are drinking water sources.

URBAN TRANSPORTATION HAS A RELATIONSHIP WITH REGIONAL CONTEXT  
 Mobility does not end at the city boundary. Rather, we found the relation between the cities and their surroundings influences transportation demands. On the one hand, many people are commuting on a daily basis from neighboring municipalities into Solo and Palembang. This is especially the case in Solo where high numbers of laborers commute from neighboring Sukoharjo to work in factories.

A different kind of relationship exists between the city center and surrounding villages in all three cities.

# SOLO – “POLYCENTRIC” CITY

Solo is a very old city with dense, compact neighborhoods with many small employment and activity centers. Not all roads lead from the city center to the periphery – rather the road network provides many connections to numerous important centers.

- Key Streets that Define City Structure
- Arterial Street
- Collector Street
- Local Street
- Municipal Boundary
-  Train Station
-  Bus / Mini-bus Station
-  Market
-  Mall
-  City Palace
-  University



While some villagers do commute in on a daily basis, we found that many villagers move between the city and villages in cycles – working in, for example, agriculture for a month and then coming to the city to vend for a shorter period of time. These two forms of regional relationships are important to acknowledge since these patterns of movement support both family livelihoods and local economies, especially when people are commuting into the city because poverty is higher in the neighboring municipalities and villages.

## ECONOMIC SETTING

Formal and informal public transportation systems in Jogja, Solo, and Palembang support urban economies by bringing people to employment centers and transporting goods and materials. The location of employment centers has a primary role in influencing where demand for public transportation develops in the city. An important difference among the three cities is that employment centers in

Jogja and Solo are distributed throughout the city, in Palembang they are more concentrated at the center. In Solo, for example, every neighborhood has a few factories and a market.







Informal public transportation has an important role in transporting goods. In Jogja and Solo, home industry makes up a significant portion of employment – people who are manufacturing garments like batik or preparing food products at home use informal transportation to move goods and are less likely to be commuting each day. We also found that informal transportation has a significant role in moving goods and materials from large central markets like Pasar Gede in Solo to smaller markets like Pasar Legi and Pasar Bangunharjo.

## POLITICAL SETTING

Political leaders in Jogja, Solo, and Palembang have a lot of power to determine local government policies toward informal public transportation. For

# PALEMBANG – “LINEAR” CITY

Palembang is more than twice the size of Jogja and Solo (the scale of this map is two times bigger than the maps of Jogja and Solo). Most development and activity is located off of Jalan Jendral Sudirman, which runs north-south through the city.

- Key Streets that Define City Structure
- Arterial Street
- Collector Street
- Local Street
- Municipal Boundary
-  Train Station
-  Bus / Mini-bus Station
-  Market
-  Mall
-  City Palace
-  University



## THE RELATIONSHIP BETWEEN THE CITY AND SURROUNDING VILLAGES OR NEIGHBORING MUNICIPALITIES IS IMPORTANT BECAUSE THERE IS A HIGH LEVEL OF REGIONAL MOVEMENT.

example, in 1994 *becaks* were banned in Jakarta and the same was true in Solo until 2001, where *becaks* were restricted from arterial roads to reduce conflicts with traffic. Whereas these bans put direct constraints on where drivers can operate, city governments in the three cities also indirectly put pressure on the transportation system through permitting systems. In Jogja, the city is no longer renewing permits for *angkots*, which in the long-term will reduce the number of vehicles in the system.

At the same time, the national government in Indonesia is promoting bus rapid transit (BRT), which

is being introduced in Jogja, Solo, and Palembang. This service is intended to modernize the public transportation systems and reduce private vehicle emissions. Yet we found that local municipalities may lack the technical capacity to operate and manage BRT and financing these systems may also be a challenge.

## IMPLICATIONS OF THE FOUR URBAN SETTINGS

Based on our research, we've identified a few nuanced ways in which planning for transportation in Jogja, Solo, and Palembang is different than in Indonesia's big cities. These findings are important to acknowledge and keep in mind as new policies for both formal and informal public transportation are formulated:

- Due to different historic development patterns in each city, the road network is utilized in various, locally unique ways – the narrow road networks found in neighborhoods have an especially

important role in support livelihoods of people in poverty.

- The regional structure of the city and its surrounding municipalities and villages influences where there is demand for informal public transportation.
- Restrictions on informal public transportation – such as banning *becaks* or restricting *angkot* permits – may unintentionally disrupt the numerous small ways the urban poor are using these vehicles to support their livelihoods and local economies.
- Introducing new technologies such as BRT looks good politically, but may not necessarily be the most effective solution to meet transportation demand.
- In medium-sized cities like Jogja, Solo, and Palembang, people take shorter trips because of the mixed-use character of neighborhoods; flexible modes help to meet demand when there is a high number of people making specialized short trips, in contrast to when most people commute to the same destination, such as the city center.



#### THE “ECONOMIC SETTING” OF INFORMAL PUBLIC TRANSPORTATION

*Some becak drivers earn most of their income by providing goods and materials transport services to vendors in the city markets and warehouse districts; policies that restrict becak use can easily and unintentionally disrupt economic activity.*

# OVERVIEW OF IPT MODES AND SYSTEM

## SECTION 3.0

This section describes the various modes of transportation and spaces in Jogja, Solo, and Palembang that make up the informal network and their relationship to the formal system. Just as the definition of informal public transportation cannot be formulated without referencing formal transportation, a map of the overall informal transportation system is difficult to draw without including the formal.

### ***IPT IS BOTH A SOURCE OF MOBILITY AND EMPLOYMENT – IT IS STRONGLY CONNECTED TO THE LIFE AND ECONOMIES OF INDONESIAN CITIES.***

Informal public transportation both overlaps with and complements formal transportation networks, picking up where formal routes end and providing additional service in busy areas. Informal transport is credited as the backbone for informal economic activities, but it also plays a role in the formal economy by providing mobility to workers of all economic backgrounds. Similarly, informal public transportation takes many forms because there is a diversity of demand. Roles for IPT are always expanding as drivers organize themselves and adapt their vehicles and routes in response to perceived needs of passengers.

## DESCRIPTION OF MODES

### ANGKOT

*Angkots* are minibuses that operate on fixed routes throughout the city. Of all formal and informal modes, *angkots* carry the largest share of passenger trips.

**VEHICLE TYPE:** Small van with side entrance and bench seating.

**OWNERSHIP:** Drivers typically rent from someone who owns multiple vehicles.

**COSTS:** Owners pay for maintenance, but drivers pay for operating costs including fuel, parking fees, and payments to police or area mafia – known as *preman*.

**FARES:** Usually a flat-rate between Rp. 1,000 and Rp. 3,000.

**ROUTES:** Determined by local government; private vehicle owners purchase a license to operate a vehicle on a given route. “Black *angkots*” are unlicensed and operate on routes determined by the driver.

**RELATIONSHIP TO FORMAL TRANSPORTATION NETWORK:** *Angkots* are formal because they operate with licenses, but are operated in ways that are considered informal. There are no pre-determined stops and so *angkots* pull over anywhere to pick up passengers. *Angkot* drivers also put extreme care into customizing their

## KEY MESSAGES

### SECTION 3: OVERVIEW OF INFORMAL PUBLIC TRANSPORTATION MODES AND SYSTEM

- Informal public transportation provides services that complement formal public transportation, making the overall system more efficient.
- Driver “tactics” – adaptations of their vehicles and routes – help to make informal public transportation flexible to meet riders’ needs, fill gaps in coverage, and serve market niches.
- IPT increases mobility options without requiring management by local government. However there are public health and safety costs that have to be considered.

vehicles with graphics, lighting, and sound systems – so there is no standard look except for lettering on the side of vehicles describing the route.

**TYPICAL PASSENGERS:** Commuters, shoppers (especially women and elderly), and students. Students receive a discounted fare and because there are many universities in Jogja and Solo, students make up a large portion of *angkot* riders.

**EXISTING INFRASTRUCTURE:** Curbs and jersey-barriers to define passenger waiting-areas; turn-around terminals at ends of routes.

#### OJEK

*Ojeks* are motorcycles that usually carry one passenger. Since the mid-2000s, private ownership of motorcycles has rapidly grown in Indonesian cities. Overall, *ojeks* carry a smaller share of passengers than *angkots*, but they are much more numerous.

**VEHICLE TYPE:** Motorcycle.

**OWNERSHIP:** Drivers usually own their motorcycle or use one owned by a family.

**COSTS:** Low-cost financing make motorcycles very accessible to the urban poor; an motorcycle costs Rp. 5 million (~ US \$500), but only a Rp. 500,000 (~ US \$50) down-payment is required; drivers pay for fuel and maintenance.

**FARES:** Negotiated per passenger based on distance with a minimum of Rp. 5,000 (~ US \$0.50).

**ROUTES:** *Ojeks* are available at any time of day to go anywhere in the city; they are either summoned on the street or accessed at an *ojek* stand. *Ojeks* are popular since they can take passengers to their doorstep (“last mile”) or from their doorstep (“first mile”) to their destination; *ojeks* alternatively connect with other formal and informal modes of transport.

**RELATIONSHIP TO FORMAL TRANSPORTATION NETWORK:** *Ojeks* are not licensed and so nearly all would be considered informal.

**TYPICAL PASSENGERS:** Commuters without their own vehicle often hire an *ojek* to pick them up for work every day, shoppers (especially women and elderly), and people making “first mile” or “last mile” trips.

**EXISTING INFRASTRUCTURE:** N / A

#### BECAK

*Becak* are pedi-cabs with a covered seat in front and powered by the driver with bicycle peddles. They are the slowest moving mode of informal transit. While common throughout the city, there are fewer *becaks* than *ojeks*.

**VEHICLE TYPE:** Pedi-cab.

**OWNERSHIP:** About half of drivers we interviewed owned their *becak* while the other half rented from someone else.

**COSTS:** Between Rp. 500,000 and 700,000 (~ US \$50 to US \$70).

**FARES:** Negotiated per passenger based on distance with a minimum between Rp. 2,000 and 6,000 (~ US \$0.20 to ~ US \$0.60).

**ROUTES:** Like *ojeks*, *becaks* are available at any time of day to go anywhere in the city; they are either summoned on the street or accessed at a *becak* stand. *Becaks* are used for “first mile” and “last mile” trips.

**RELATIONSHIP TO FORMAL TRANSPORTATION NETWORK:** *Becaks* are a permitted form of

## PAK BUDI

40-year *angkot* rank organizer in Jogja who works on the route from the city center to the ring road outside the city boundary



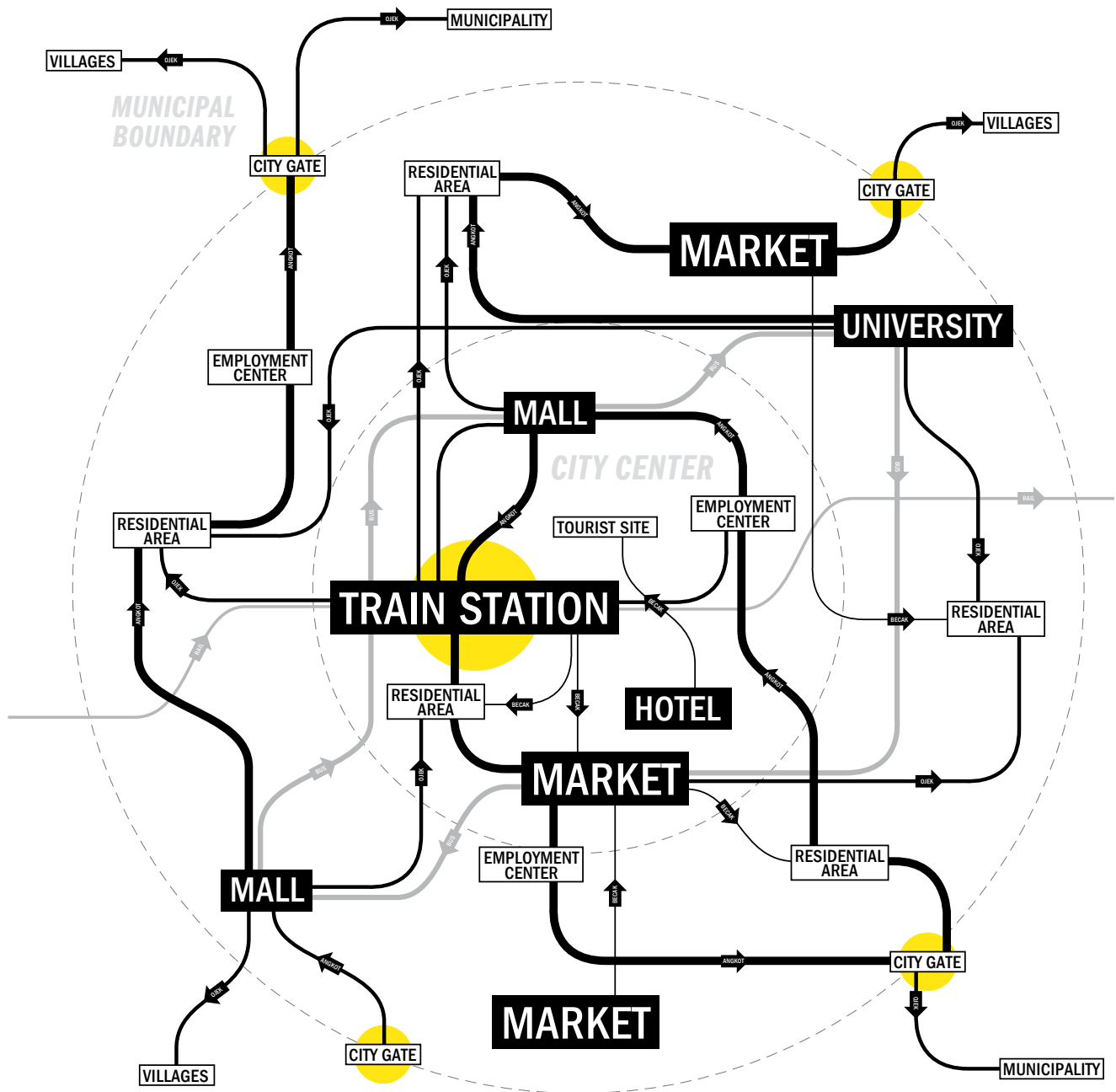
### HIGH COMPETITION

“Wolo wolo kuato’ – It means it is now survival of the fittest among the *angkots* drivers.”

## INFORMAL MODE SUMMARY

|                      | ANGKOT  | OJEK   | BECAK   |
|----------------------|---|--|---|
| <b>ADVANTAGES</b>    | <ul style="list-style-type: none"> <li>• Flexible pick-up and drop-off sites.</li> <li>• Low-cost option for passengers.</li> <li>• Accessible in many areas of the city.</li> <li>• Engines can be upgraded.</li> <li>• Efficient carrier of high volumes of passengers.</li> <li>• Accessible employment for urban poor.</li> </ul> | <ul style="list-style-type: none"> <li>• Navigate narrow roads.</li> <li>• Affordable to operate.</li> <li>• “Last mile” service.</li> <li>• Provide quick, long trips.</li> <li>• Provides fast intermodal connections.</li> <li>• Accessible employment for urban poor.</li> </ul> | <ul style="list-style-type: none"> <li>• Zero carbon emissions.</li> <li>• Navigate narrow roads.</li> <li>• Affordable to rent and operate.</li> <li>• “Last mile” service.</li> <li>• Quiet and non-motorized.</li> <li>• Door-to-door service.</li> <li>• Accessible employment for urban poor.</li> </ul> |
| <b>DISADVANTAGES</b> | <ul style="list-style-type: none"> <li>• Exhaust reduces air quality.</li> <li>• Limited to wide roads.</li> <li>• Unreliable service.</li> <li>• Perceived to drive recklessly.</li> <li>• Perceived as dirty and uncomfortable.</li> </ul>  | <ul style="list-style-type: none"> <li>• Exhaust reduces air quality.</li> <li>• Dangerous for passengers.</li> <li>• Carries few passengers.</li> <li>• Parking congests public spaces and roads.</li> </ul>  | <ul style="list-style-type: none"> <li>• Slow.</li> <li>• Carries few passengers.</li> <li>• Perceived to cause congestion.</li> </ul>  |
| <b>OPPORTUNITIES</b> | <ul style="list-style-type: none"> <li>• Provide low-skill employment opportunities.</li> <li>• New feeder routes for IPT are easy to create and existing routes easily extended.</li> </ul>  | <ul style="list-style-type: none"> <li>• Provide low-skill employment opportunities.</li> <li>• Can service IPT routes easily and flexibly.</li> </ul>   | <ul style="list-style-type: none"> <li>• Contribute to cultural and visual character of Indonesian cities.</li> <li>• Provide low-skill employment opportunities.</li> </ul>  |

# TRANSPORTATION NETWORK CONCEPT DIAGRAM



This diagram is based on the informal public transportation in Solo and conceptually illustrates the variety of urban spaces and vehicle modes people use to access mobility. Angkots carry the majority of riders, but ojets and becaks are important for making shorter connections among home, markets, and nearby villages.

- |                      |             |              |
|----------------------|-------------|--------------|
| ■ Transit Hub        | — Angkot    | — Bus Route  |
| □ Common Destination | — Route     | — Rail Route |
| ● Intermodal Hub     | — Ojek Trip |              |



transportation (in 2001, Solo lifted a ban on *becaks* on arterial roads), but drivers do not have a license.

TYPICAL PASSENGERS: Shoppers and tourists.

EXISTING INFRASTRUCTURE: N / A

### BUS RAPID TRANSIT (BRT)

Bus rapid transit is known as “TransMusi” and is being introduced in Jogja, Solo, and Palembang. BRT operates in a dedicated right-of-way and has elevated boarding platforms to enable high volume loading and unloading. BRT is subsidized by local government.

VEHICLE TYPE: Bus.

OWNERSHIP: Municipalities own the vehicles.

COSTS: N / A

FARES: Fixed rate per ride ranging from Rp. 3,000 (~ US \$0.30) in Jogja and Solo to Rp. 3,500 (~ US \$0.35) in Palembang.

ROUTES: Each city currently has one BRT route.

RELATIONSHIP TO FORMAL TRANSPORTATION NETWORK: Managed and operated by municipal government.

TYPICAL PASSENGERS: Commuters, shoppers, and students.

EXISTING INFRASTRUCTURE: Fixed boarding platforms; bus terminals; in some cases, dedicated BRT lanes.

### PUBLIC BUS

Public buses are high occupancy vehicles operating along fixed routes. Public bus use has recently been declining, which has resulted in a decline in maintenance.

VEHICLE TYPE: Bus.

OWNERSHIP: Private companies own and operate the vehicles and pay for a license to operate along a fixed route.

COSTS: N / A

FARES: Rp. 3,000 (~ US \$0.30) to Rp. 4,000 (~ US \$0.40)

ROUTES: Multiple routes per city are determined by municipal government.

RELATIONSHIP TO FORMAL TRANSPORTATION NETWORK: Routes licensed by municipal government.

TYPICAL PASSENGERS: Commuters, shoppers, students, and urban poor.

EXISTING INFRASTRUCTURE: Bus stop shelters; curbs and jersey-barriers to define passenger waiting areas; some bus terminals.

Other modes of formal and informal public transportation include taxis, *bajajs*, *kelincis*, and *keteks*.

### TAXI

Licensed taxis are accessible at most markets and train stations and are available to summon by phone. Fares are based on metered rates, though a minimum of Rp. 25,000 (~ US \$2.50) are typically charged.

**ON THE SURFACE, INDONESIAN STREETS APPEAR TO BE CHAOTIC PLACES, BUT INFORMAL PUBLIC TRANSPORTATION ACTUALLY WORKS VERY WELL FOR ITS USERS.**

### BAJAJ

*Bajajs* are three-wheeled vehicles that seat one to three passengers. They are common in Jakarta, but there are few in Jogja, Solo, and Palembang.

### KELINCI

*Kelinci* are a series of connected carts with seating that are pulled by a small motorized vehicle. They are designed as an amusement ride for children, but



WHAT IS...

## “BUS RAPID TRANSIT?”

*Bus Rapid Transit, known as BRT, is a public bus system that makes limited stops, travels on priority lanes, and has custom boarding platforms. Because of fewer stops and reduced boarding times, BRT is intended to provide faster service than regular public bus. BRT has been introduced in varying degrees in Jogja, Solo, and Palembang and is known variously as “Trans Jogja,” “Batik Solo Transit,” and “Trans Musi.”*

are also used to bring groups of people to events such as weddings or funerals. They are also used to transport children to school.

## KETEK

*Ketek* are river taxis operated by individual owners in Palembang.

## DESCRIPTION OF THE OVERALL SYSTEM

On the surface, Indonesian cities are crowded places where people are constantly jostling for space on the road, carting goods to market, ambling across traffic on the way to school, and swarming on motorcycles. All of this activity blurs into one mass of movement – to most people the difference between formal and informal public transportation is hard distinguish.

Yet at the same time, the difference may not be all that important since passengers commonly ride a public bus then switch to an *ojek* or transfer from the BRT to a *becak*. Far from being two different systems, formal and informal transportation complement each other in many ways with plenty of interconnections between them.

Further, for passengers like Farikah and drivers like Budiyo and Supri, the public transportation system works very well. First of all, informal transportation modes, especially *angkots*, are often more affordable than public transportation – though *becaks* and *ojeks* are not always

## CASE STUDY

### WHY THE USE OF ANGKOTS IS DECLINING – JOGJA

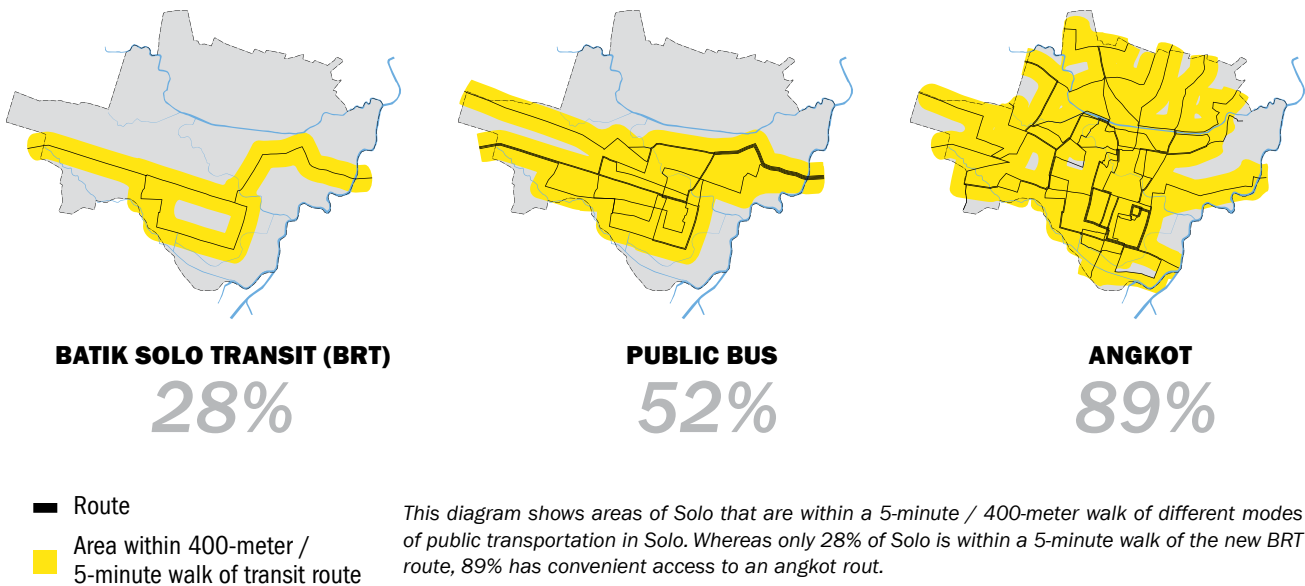
Uncoordinated regulation of *angkots* in Jogja has led to a decline in ridership as well as service that is available to the urban poor. Since 2000, there have been only three government-approved *angkot* routes in Jogja, and these do not go to the city center. Even though the city still issues licenses to operate on the three routes, these routes are clearly not where demand is since *angkots* are commonly seen with only one or two passengers – or completely empty. *Angkots* may be needed in other parts of the city, but the vehicle owners are taking *angkots* off the roads rather than maintain them. Whereas on the Kaliurang Route, which runs



*Angkots in Jogja are commonly empty of passengers.*

to the foot of the Merapi volcano, there used to be 95 *angkots*, now only about 60 remain. Without a clear policy or reason, *angkot* service in Jogja is gradually being phased out.

## BRT / BUS / ANGKOT COVERAGE COMPARISON



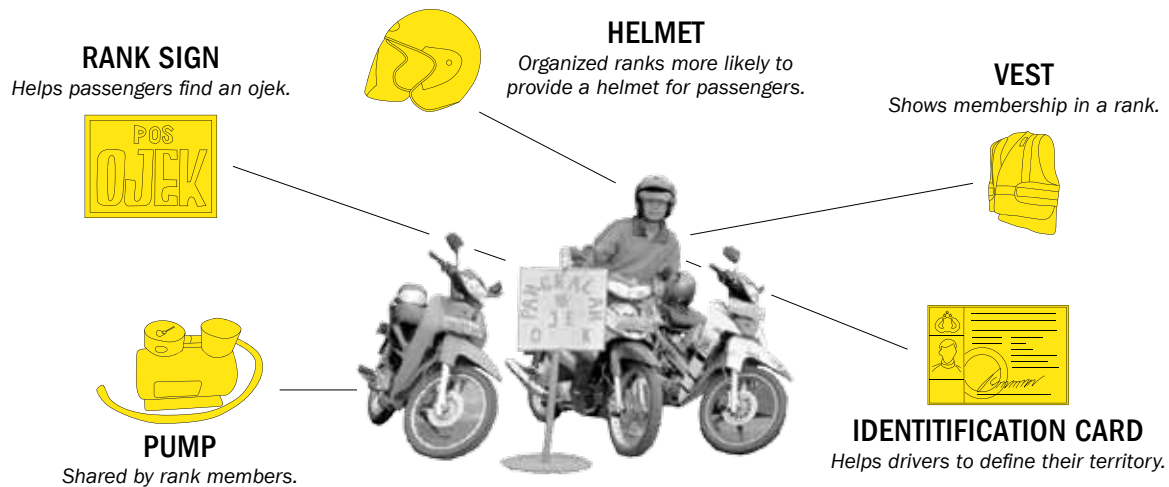
as affordable. Farikah, for example, pays only Rp. 1,000 (~ US \$0.10) to ride an *angkot* to school. Secondly, by complementing formal modes, IPT increases the efficiency of the overall system. Informal public transportation is efficient because it carries high volumes of passengers, in the case of *angkots*, and more importantly, reduces waiting times when riders need to make a connection. Budiyo, for example, can pick-up passengers who have taken TransMusi to the Ampera Bridge, but need to travel to a nearby district that is only served by a bus that stops a five minute walk from the BRT. Third, informal public transportation is flexible in how it can be used to support livelihoods of the poor. So for example, Supri can ferry goods between markets on his *becak*. In these ways, both Budiyo and Supri are flexible in the service they provide.

The kinds of connections that are possible when formal and informal public transportation complement one another are illustrated in the diagram on page 32. This diagram is a composite of important spaces and common connections we observed in all three cities, though this conceptual representation of the transportation network most closely resembles Solo.

The overall network includes all modes – public buses, BRT, *angkots*, *ojeks*, and *becaks* – and *angkots* carry the highest number of passengers. *Angkots* therefore play a central role. In addition, we found that the modes typically viewed as informal provide one of two services – filling gaps in coverage or serving niche markets. These two defining services of informal public transportation tend to occur at important intermodal spaces – the train station and the city gates. Informal public transportation is accessed at other large activity centers as well – malls, markets, hotels, and universities. When IPT is accessed in these places, it is usually for shorter, local trips.

With all of these options, passengers seek out whatever is the most convenient or rapid route based on their needs. Oftentimes, a more direct route is available via informal public transportation than a formal mode. This is particularly important in a “polycentric” city like Solo, where passengers need to access many different activity centers. So a driver like Supri might be found driving an elderly woman who lives outside of Solo from the market to the bus terminal – he helps to carry her goods, loading his *becak* with vegetables. People in Jogja and Palembang often need to travel from a neighboring

## OJEK DRIVER “PARAPHENALIA”



village or municipality to the city center to catch the BRT – this is where Budiyo is helpful because he can pick up passengers at the city gates.

BRT is more suited to primary roads and arterials, whereas in many cities much of the road networks is not covered by these kinds of streets. In Jogja and Palembang, large areas of the city are not served by arterial roads, so informal transportation is important for mobility.

### INFORMAL PUBLIC TRANSPORTATION PROVIDER TACTICS

All three of our defining characteristics of informal public transportation – IPT creates flexibility, fills gaps, and serves niches – are generated by the drivers themselves. *Becak*, *angkot* and *ojek* drivers develop ingenious ways to customize service in order to be responsive to the needs of people and attract business. These tactics are instructive because they make the overall transportation system more user-friendly and efficient.

### DRIVER ORGANIZATIONS AND COOPERATIVES IMPROVE SERVICE TO PASSENGERS

Drivers of *ojeks*, *becaks* and *angkots* usually organize themselves around a cooperative known as a “rank” or *pankaglong* at a specific place. Members of the rank follow rules ranging from dress code to fares to where drivers can operate. For example, at an *ojek* rank, the organization will recognize the right of members to operate in an area and impose an order for drivers to take passengers. The rank benefits drivers because it limits competition and helps to attract customers. Rank members may have access to an emergency fund and repair tools.

Passengers benefit because drivers are accountable to the rank – they have an incentive to provide good service and collect a standard fare. Moreover, once a rank has established itself, it has increased capacity to serve areas where intermodal connections are needed or formal public transportation is lacking.

### UNIFORMS MAKE DRIVERS EASIER TO IDENTIFY

Drivers use uniforms to identify with a rank. Oftentimes, the rank will be sanctioned by a mall, hotel, train station, or police station to serve passengers in a given area of the city. The uniform is another sign of accountability and increases

## CASE STUDY

### WHAT HAPPENS WHEN GOVERNMENT RECOGNIZE DRIVER ORGANIZATIONS – JOGJA

Government recognition is important for driver ranks to be successful. KITEG is one rank with 21 members that works near the Tugu train station in Jogja. Once recognized by local government, the group applied to license their *becaks*. Afterwards, they received a yellow license plate marked “YB” and a code to indicate where they can operate in the city. The drivers wear matching uniforms and the vehicles are painted the same color. Because of their level of organization, the *becak* drivers are more likely to pick up tourists who are looking to follow the pre-determined route around the historic Kraton palace. They earn a set price of Rp. 10,000 for the route. In addition, the organization improves the ability of the KITEG organizer to



*A typical partnership is between a local police district and a rank that operates in a prominent public space like a market.*

defend their waiting areas against non-organized drivers. Even though the recognition allows the drivers to increase income, the licensing process is actually free of charge from local government.

trust between drivers and passengers. Increased accountability helps drivers to grow their business.

#### DRIVERS ADJUST FARES AND SCHEDULES TO ATTRACT NICHE MARKETS

Informal public transportation providers respond to particular demands that occur at different times of the day. For example, many *becaks* drivers primarily transport goods from the central market to neighborhood markets during the morning. Similarly, *angkot* drivers offer reduced fares for students.

#### CUSTOMIZATION OF VEHICLES IMPROVE PASSENGER EXPERIENCE

Some *angkot* drivers make their vehicles as distinct as possible, painting them with bright graphics, customizing the interiors with padded seating and colored lights, and installing powerful stereo systems. On one hand, the young men who drive *angkots* spend more time in their vehicles than any other place and so they are making their work environment comfortable for themselves. On the other, passengers that we interviewed said that rather than finding the

graphics and loud music a nuisance, they perceive it as a form of entertainment.

### WHY IS INFORMAL PUBLIC TRANSPORTATION VALUABLE TO MID-SIZED CITIES?

IPT is valuable to cities because it provides a public service, filling gaps in coverage that some city government do not supply on their own. Often local governments lack capacity to manage large public transport systems and financial resources to acquire and maintain vehicles. IPT creates services when city governments do not or cannot invest resources in equipment, infrastructure, or management personnel.

In addition, formal public transportation that is currently provided in mid-sized cities typically focuses on the large scale transit using buses. While this is ideal for cities where many people take long trips, in mid-sized cities there is more demand for small-scale transportation that can access narrow streets and make many stops. IPT meets these needs,

providing a “public good” without local governments needing to invest in vehicles or infrastructure.

## IS THERE A CASE TO MAKE AGAINST INFORMAL PUBLIC TRANSPORTATION?

Despite the many advantages offered by informal public transportation, there are also drawbacks – but these can be identified and addressed. IPT is often blamed for traffic and congestion, and poses threats to public health and safety. The image of reckless driving generates bad press and negative perceptions of drivers. Safety concerns abound due to the lack of standards and regulation.

By identifying the negatives issues they can be discussed and concerns addressed. For example, *angkots* stop irregularly to pick up passengers, but that is also because there are no bus stops. An ‘*angkot* stop’ system would give people a clear place to wait and a fixed location for *angkot* drivers to pull to the curb.

It is important to consider too that many of the reasons why IPT providers are criticized are reasons why IPT is so effective. For example, while some people condemn the apparent slowness of *becak* drivers, its exactly their sedate manner that attracts tourists to use them to explore the city. Oftentimes it requires a shift in perception in order to see how what is considered negative is actually positive.



### MAKING SPACE FOR INFORMAL PUBLIC TRANSPORTATION

Shoppers at markets like Pasar KM5 in Palembang find *becaks* a useful way to transport heavy groceries home, yet even though this is a common use, most markets have no designated areas for *becak* parking.

# PERSPECTIVE OF PROVIDERS

## SECTION 4.0

Everyday, Budiyo can be found in his *angkot* driving the large avenues of Palembang and Supri is carting goods around Solo in his *becak*. They are joined on the streets by fare collectors, parking attendants known as *calos* who bring customers to drivers, mechanics, and the owners of the vehicles – but it really is the drivers who keep the city moving. Yet despite this important role in both the economies and cultures of Jogja, Solo,

### **EVEN THOUGH IPT PROVIDERS EARN LOW INCOME, DRIVING IS A POSITIVE ALTERNATIVE TO UNEMPLOYMENT AND BRINGS SELF-DIGNITY.**

and Palembang, drivers enjoy little financial gain, face barriers from government regulation, and face constant risk to their health. The fares Budiyo is permitted to charge, for example, are the lowest among all available modes of transportation even though *angkots* carry the most passengers. Nevertheless, as this section describes, drivers work together to address the risks that come with the job and create opportunities.

### **HOPES AND ASPIRATIONS**

Our experience interviewing informal public transportation providers has been that it is not always easy to talk about the future with people

whose livelihood options are extremely limited. And it is also difficult to know exactly why drivers are reluctant to discuss their dreams and interpret what it means when they say they want a “better life.” Our team brought together a group of *becak* drivers ranging in age from 30 to 59 from two *pangkalang* in Solo – SMA St. Ursulin and Pertigaan Jajar. Based on this discussion and other interviews, we’ve made at least two conclusions about the aspirations of drivers.

- Driving creates income, yet just as importantly, employment has value as a source of personal dignity.
- Drivers want to see conditions improve in their sector and believe that local government has a role to play in doing so.

When driving is a primary occupation, it is likely that informal public transportation providers are living day-to-day on their earnings. Older drivers may have chosen driving after having worked at other livelihoods earlier in life. But the 20- and 30-year old drivers of *angkots* and *ojeks* are facing extremely limited employment options. One driver characterized the sector as “survival of the fittest.” Few of the drivers we interviewed expressed aspirations for employment in other sectors, but rather they are focused on increasing their income through more passengers. While these responses may seem discouraging, informal public

## KEY MESSAGES

### SECTION 5: PERSPECTIVE OF PROVIDERS

- The value of employment goes beyond income – drivers with few other options gain personal dignity.
- Drivers believe local government has a role to play in improving conditions.
- Key factors that influence income potential are ownership and regulation of fares and routes.
- Self-organized cooperatives known as *pangkalang* help drivers to share resources, defend territory, and create a safety net for the risks of the job.



#### WHAT IS A...

#### “PANGKALANG?”

A *pangkalang* – also known as a *rank* – is a group of organized drivers. Ranks form through a variety of means, ranging from government recognition to a simple sharing of uniforms. Membership in a rank entitles a driver to operate in a particular territory, for example near a station or in a neighborhood, or to serve a specific customer group. Rank members have access to uniforms, a parking attendant, shared repair equipment, and, sometimes, the resources of an emergency fund.

transportation nevertheless provides a source of income with few barriers to entry when other low-skill livelihoods like laboring are not available.

Driving is a positive alternative to unemployment and brings self-dignity, an attitude which came through indirectly in the interviews. There is a sense of either neglect or antagonism from local government, especially among *becak* drivers who are concerned about future bans. At the same time, several drivers expressed that government programs targeted to drivers would increase the perception that informal public transportation is an asset to cities. Government attention would raise the level of respect for drivers, making the livelihood more legitimate. This desire for dignity is reflected in the pride and group identity we observed among members of *pangkalang* that are sanctioned by a hotel, business, or local police station.

### POTENTIAL FOR INCOME

The economic realities of informal public transportation are nevertheless harsh. Two factors are especially influential on potential income levels – vehicle ownership and the degree of regulation of routes and fares.

#### ROLE OF OWNERSHIP

*Ojek* and *becak* drivers earn slightly more than *angkot* drivers, which is unexpected since *angkots* carry the majority of riders in the overall system. Ownership is an important factor in earning capacity. Vehicle rental costs are a burden on *angkot* drivers. For example, in Palembang *angkot* rent averages Rp. 90,000 per day (~ US \$9). Daily expenses also include fuel (Rp. 80,000 / ~ US \$8), parking fees (Rp. 2,000 / ~ US \$0.20), and bribes to the local strong man known as a *preman* (Rp. 2,000 / ~ US \$0.20). Drivers reported they earn about Rp. 225,000 (~ US \$22.50) in a 12-hour shift, so their net income is only about Rp. 50,000 (~ US \$5). When drivers were asked whether this is a stable income they said it varies, and at times they only earn Rp. 20,000 a day (~ US \$2).



The situation is different for *ojek* drivers who usually own their vehicles. They reported average daily income ranging from a low of Rp. 30,000 (~ US \$3) in Solo to a high of Rp. 90,000 (~ US \$9) in Jogja. Like *angkot* drivers, some *becak* drivers rent their vehicles and the cost is only Rp. 3,000 (~ US \$0.30). They reported income ranging from Rp. 25,000 to Rp. 50,000 (~ US \$2.50 to \$5). Yet despite low levels, drivers perceive IPT as a good income source because payment is immediate, not at the end of the month.

#### ROLE OF REGULATION

Whether and how fares and routes are regulated also impacts income levels. Differences exist between the modes in the way fare and routes are determined. *Angkots* routes, schedules, and fares are regulated by government, whereas *becaks* and *ojeks* have flexibility to choose where they go and set prices. As a result, *angkot* drivers charge the lowest fares of all modes. In addition, *angkot* drivers reported

## PAK IDRUS

47-year *angkot* driver whose route goes from the central city to the ring road outside of the city boundary

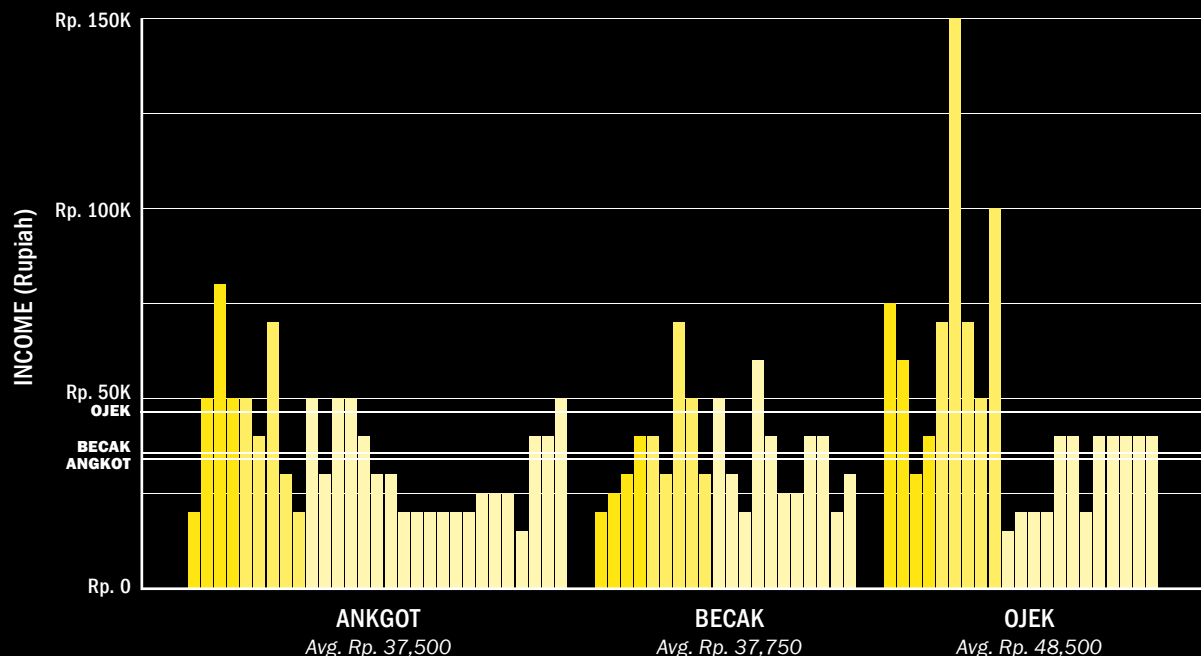


### SEARCHING FOR FORTUNE

“Now for *angkot* drivers it’s all about luckiness – you have to have the best timing in order to find passengers.”

that when local government does not regulate a route – by for example enforcing drivers’ schedules or prohibiting “black” or unlicensed *angkots* – or routes overlap with public buses, they lose income because more drivers are on the road. Being autonomous appears to work well for *ojek* and *becak* drivers, even though they carry fewer passengers.

## DRIVER INCOME COMPARISON



Despite carrying more passengers than any other mode, *angkot* drivers earn the least income. (SOURCE: CDIA Survey)

■ Palembang ■ Jogja ■ Solo  
— Heavy white line shows average income by mode.



## AGENCY AND RISKS

Drivers create agency within the informal public transportation system through self-organization into cooperatives and building relationships with formal economy businesses and institutions. Rank organizations known as *pangkalang* create opportunities for drivers to share resources, increase competitiveness, and gain political influence.

*Ojek* and *becak* ranks cooperatively manage emergency funds and repair shops, which are often set up on the side of the road. Members therefore share the costs of maintenance and have a safety net against risk. Drivers reported physical, economic, and environmental risks. *Ojek* and *becak* drivers are exposed to traffic accidents and robbery. *Angkot* drivers are liable for damage to rented vehicles. Drivers of all three modes are subject to extortion from *preman*. In addition, quality of health is an issue for drivers who are exposed to air pollution daily.

Various ranks also enter into agreements regarding who can pick-up passengers in particular areas of the city. In this way, ranks agree to defend one another's territory, which limits competition and ensures access to desirable areas with high demand. This approach works especially well for ranks that associate with formal economy businesses like tourist hotels in Jogja and police stations near train terminals. Lastly, drivers gain political leverage through membership in ranks, which can negotiate with the police or city government. This is the case in Solo where large driver organizations have influenced policies.

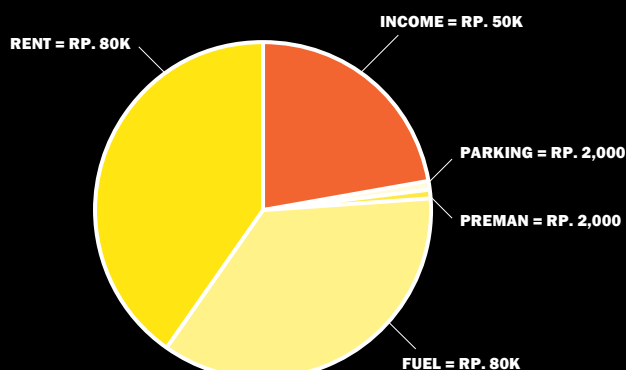
WHAT IS AN...

### “EMERGENCY FUND?”

A portion of the membership fees paid by *angkot*, *ojek*, and *becak* drivers who participate in a rank go to an emergency fund. Members have access to this fund when their vehicle breaks down or is stolen or when they have medical bills from injuries on the job. The emergency fund forms a small safety for a group who lack access to any form of insurance.

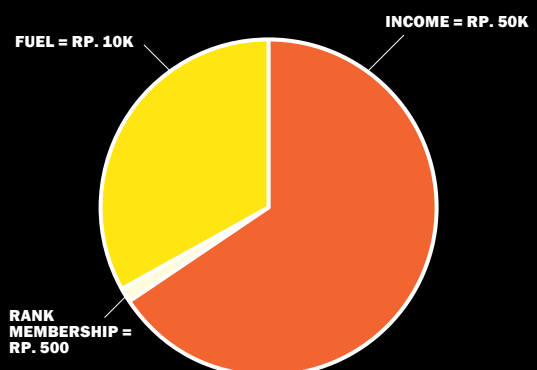
## INCOME V. EXPENSES

### ANKGOT DRIVER



**TOTAL INCOME & EXPENSES = RP. 225,000**

### OJEK DRIVER



**TOTAL INCOME & EXPENSES = RP. 30,500**

These charts show income and expenses for two drivers we interviewed in Solo; even though the *angkot* driver in this case earns more, the *ojek* driver takes home as income a much higher proportion of the fares he collects.

(SOURCE: CDIA Survey)

Income Expenses

## CASE STUDY

### HOW DRIVER ORGANIZATION LED TO INCLUSION IN PARTICIPATORY BUDGETING – SOLO

In some instances, driver organization has led to a higher level of citizen participation. In Solo, the rank PPBS has 400 members, most of whom work at six different markets. The group demonstrated its potential to influence public planning forums during the 2008 / 2009 musrenbang – which is an annual participatory budgeting process through which residents direct government investment in neighborhoods. PPBS received a grant through musrenbang of Rp. 2 million, which the organization used to purchase two new *becaks*. Yet the *becak* drivers' influence comes when fewer Solo residents work as *becak* drivers. About 70% of drivers actually live outside of the city. And the official count of *becaks* in Solo declined from 8,000 in 2005 to only 3,000 in 2010.



*Drivers in Solo purchased two new becaks after securing funding through the local participatory budgeting process.*



#### DRIVERS ORGANIZATIONS BRING MORE STABILITY TO INCOME

*When drivers organize and partner with a local business to provide specialized service to customers, they are able to secure a more stable customer base and therefore more consistent day-to-day income.*



#### INFORMAL PUBLIC TRANSPORTATION IS WHERE USERS NEED IT

*This ojek rank locates itself near a new boarding platform for Batik Solo Transit BRT on Jalan Slamet Riyadi; when passengers get off the BRT, they can easily hire an ojek to complete their trip locally.*

# PERSPECTIVE OF USERS

## SECTION 5.0

Like many of her classmates, Farikah cannot afford a motorcycle of her own and lives in a student boardinghouse district several kilometers from her university. Every morning and evening therefore, she rides an *angkot* to and from campus. Other passengers use informal public transportation for diverse, yet specific needs – which often support important functions in the city such as economic activity or, in the case of Farikah, education that may not be conveniently serviced by formal public transportation.

### **PASSENGERS SEEK OUT INFORMAL PUBLIC TRANSPORTATION NOT FOR LACK OF OPTIONS, BUT FOR THE DESIRABLE CHARACTERISTICS EACH MODE OFFERS.**

As this section describes, the benefits of informal public transportation come with risks to health and safety as well as the possibility that service will be disrupted or discontinued.

### **TYPICAL USERS OF INFORMAL PUBLIC TRANSPORTATION**

Informal public transportation is used by middle-class city residents as well as the urban poor. While there is a broad diversity of demands for informal

public transportation, we found there are four primary groups of riders on *angkots*, *ojeks*, and *becaks* in Jogja, Solo, and Palembang.

#### URBAN POOR COMMUTERS

**NEEDS:** Lowest possible cost; an informal vendor, for example, makes Rp. 25,000 per day (~ US \$2.50) and so a round-trip BRT fare is 25% of her income.

**PREFERRED MODES:** *Angkot* (though vendors are more likely to live close to employment centers like markets and factories and therefore walk).

#### **PAK DEDY**

*34-year parking attendant for ojek rank located under the Ampera Bridge in Palembang*



#### **RAISING FARES**

“If the government wants to raise the Trans Musi cost up to Rp. 4,000, this will be too expensive for poor people – we’d rather walk than pay Rp. 8,000 every day.”

## KEY MESSAGES

### SECTION 6: PERSPECTIVE OF USERS

- Income, age, and gender are key factors that influence the choice of IPT mode.
- Though informal public transportation is low-cost and convenient, passengers are exposed to health and safety risks.



#### WHAT IS A... “SEPUR KELINGI?”

*Sepur kelingi* means “railroad rabbit.” They consist of a series of connected carts with seating that are pulled by a tractor or bus. Increasingly, these vehicles are used for special occasions – weddings, funerals, etc. – as well as in neighborhoods to transport young children to school.

#### SHOPPERS

**NEEDS:** Closest stops to both market and home in order to reduce the distance goods need to be carried after weekly shopping.

**PREFERRED MODES:** *Angkot*; convenient stops, perceived to be safer than public bus. *Becak*; can load with goods.

#### BUSINESS OWNERS

**NEEDS:** Lowest possible cost; availability at different times of day.

**PREFERRED MODES:** *Angkot*; *ojek*, if late at night.

#### STUDENTS

**NEEDS:** Lowest possible cost, closest stops to university.

**PREFERRED MODES:** *Becak*; can transport goods between markets and make deliveries; business owners will work with the same driver or contract with a rank for deliveries.

### CONSTRAINTS OF INCOME, AGE, AND GENDER AND SPECIALIZED DEMANDS

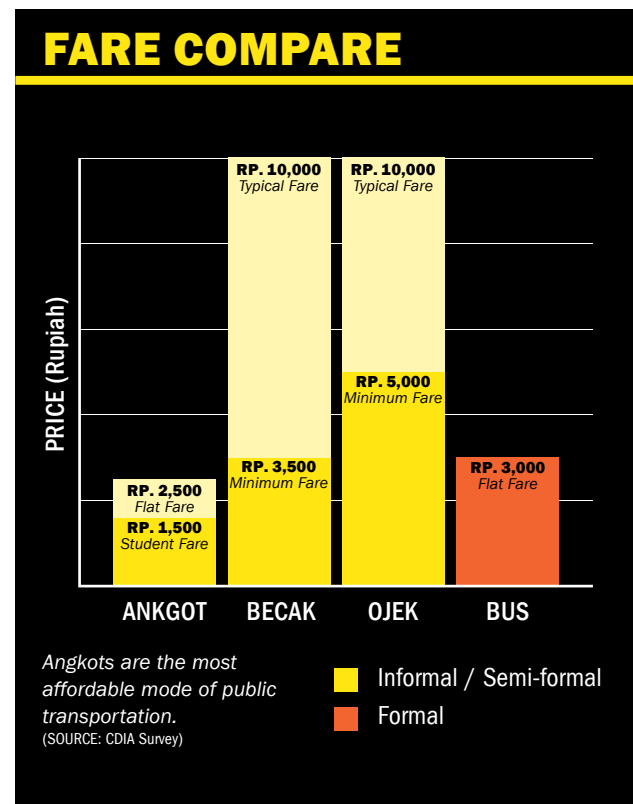
Some groups ride informal public transportation either for lack of options or constraints created by age or gender. People with very low incomes cannot afford a private automobile or motorcycle and so seek out the most affordable mode of informal public transportation, usually *angkots*. Age is another factor. High school students cannot obtain a license until they turn 17 and use *angkots* to travel to school. The elderly are unable to ride *ojeks* or stand on public buses and so also choose *angkots*. Gender too influences mode choice. Women do not ride *ojeks* because they wear long skirts. In addition, there is a perception that public buses are unsafe with robbery on board likely. So women use *angkots* for commuting and *becaks* for shopping.

In the above cases, people chose to ride informal public transportation and prefer a particular mode because of lack of better options. At the same time, mode preference is also guided by desirable characteristics perceived by users. For drivers, these positive attributes offer competitive advantages. *Becak* drivers, for example, are uniquely suited to move goods because the vehicles are easily loaded and small enough to maneuver among crowded markets. *Ojeks* are perceived to be available at any time of day and so are sought out by people with late work shifts and students. Students also received reduced fares on *angkots*.

## RIDER ISSUES

Informal public transportation is convenient and low-cost, but these two benefits are accompanied by several risks related to safety, health, and livelihoods. Informal public transportation riders reported three common issues:

- Safety is a concern because *angkot* drivers are perceived to drive recklessly and *ojek* drivers usually do not provide an adequate helmet for riders.
- Air quality is negatively impacted by exhaust from *angkots* and *ojeks*.



- Disruption of service impacts informal economic activities by, for example, delaying deliveries.
- For the urban poor, informal public transportation is the only affordable option and so if service is disrupted or disconnected, they lack resources to switch to an alternative service.

## CASE STUDY

### HOW QUEUEING SYSTEMS ARE CREATED IN PUBLIC SPACES – PALEMBANG

Around most transit stations and markets – such as Pasar KM5 in Palembang –, there are usually two systems for *ojek* queueing. Drivers who are organized are permitted to line up near the entrance – a parking attendant directs customers to them in sequence. Further from the station or market, drivers who are not organized openly compete for passengers. *Ojek* drivers generally seemed to think that the organized queueing mechanism gained them more passengers, but also protected them from robbery.



*Ojek* drivers who are not a member of a rank compete for passengers outside of the market gates at Pasar KM3.



#### FORMAL PUBLIC TRANSPORTATION CREATES OPPORTUNITIES FOR IPT PROVIDERS

*This ojek rank is located next to the Trans Musi boarding platform near the Pasar KM5 market in Palembang. When the bus stop opened, it created a new customer base of people seeking short, local trips.*



# INFORMAL PUBLIC TRANSPORTATION AND THE URBAN POOR

## SECTION 6.0

Because it is flexible, fills gaps in formal public transportation coverage, and serves niche markets, informal public transportation is especially suited to address the diverse needs of the urban poor. Informal public transportation provides mobility to workers and families, supports businesses by offering low-cost means to transport goods around the city, and is a source of employment for people with low-skills and little capital. In addition to supporting the informal economy, it also supports the overall city economy since many of the services needed in the formal sector are provided by those using informal transport.

### ***DEMAND FOR TRANSPORTATION WILL ONLY INCREASE WITH MIGRATION TO JOGJA, SOLO, AND PALEMBANG AND IPT PROVIDERS WILL FIND WAYS TO MEET THESE NEW NEEDS.***

In interviews with both drivers and passengers, we found that the relationship between the urban poor and these two key functions of informal public transportation – mobility and employment source – are often intricate and tenuous. The ability for informal public transportation providers to meet the needs of the poor therefore may unintentionally be disrupted by city policies.

### **INFORMAL PUBLIC TRANSPORTATION AS SOURCE OF MOBILITY**

Indonesian cities and their economies are going to continue to develop and with that growth the number of people in poverty in urban areas will likely increase. As the poor migrate to Jogja, Solo, and Palembang – or commute from neighboring municipalities or villages –, demand for informal public transportation will increase. Left to themselves, informal public transportation providers will find new and innovative ways to meet this demand, but three new factors will influence their capacity to do so:

- Increased passenger volumes.
- Potential longer travel distances.
- Increased congestion on roads.

These constraints may impact whether the urban poor continue to benefit from access to informal public transportation.

### **INFORMAL PUBLIC TRANSPORTATION AS SOURCE OF EMPLOYMENT**

Informal public transportation will continue to be an employment sector for the urban poor. In addition to low barriers of entry, informal public transportation is especially attractive to the urban poor because of its flexibility. *Ojek* and *becak* drivers are able to

## KEY MESSAGES

### SECTION 7: THE RELATIONSHIP TO THE URBAN POOR

- By increasing the mobility of the urban poor, IPT supports livelihoods.
- With increased migration, informal public transportation will continue to have an expanded role as mobility and an employment source for the urban poor.

adjust their hours and terms of employment in order to seek multiple jobs in both the formal and informal economy. However, as our interviews with drivers suggest, it remains to be seen whether driving itself leads to improved livelihood opportunities.

### **INFORMAL PUBLIC TRANSPORTATION IS ESPECIALLY IMPORTANT TO THE URBAN POOR, WHO UNLIKE HIGHER-INCOME GROUPS, CANNOT AFFORD MOTORCYCLES.**

*Becaks* have a specialized role as a source of employment since they commonly serve both passengers and businesses. They require little capital to purchase or rent and have low maintenance costs and, if rented, provide a short-term income generation strategy for people who face sudden unemployment. The relationship between *becaks* and other income-producing activities may also continue to diversify to support a range of sectors such as agriculture, home industry, batik, and other livelihoods.

### **RISKS OF EXPANDING ROLE OF INFORMAL PUBLIC TRANSPORTATION IN LIVES OF THE POOR**

Informal public transportation will continue to be both the primary source of mobility for people in poverty and a major employment sector, especially as migration to Jogja, Solo, and Palembang increases. Both accommodation and regulation on

the part of local government come with risks since city leaders are concerned with both the needs of the poor and the overall quality of the urban environment. Based on our interviews with drivers and passengers, our team has identified three key economic and environmental risks faced by the urban poor as informal public transportation grows and becomes a more important part of urban life:

- City policies can unintentionally interfere with informal economic activities; for example, a *becak* ban would rapidly disrupt the goods and materials movement among the markets in all three cities.
- Lack of government regulation, on one hand, and lack of self-organization among drivers, on the other, greatly reduces attention to safety and health standards; for example, *ojek* drivers who are organized in a rank are more likely to provide passengers with helmets since safety is perceived to be better customer service and can be enforced by the group.

#### **IBU SITI**

40-year flower vender in a traditional market in Jogja



#### **NO NEED FOR BRT**

“As a trader, up until now I have not used Trans Jogja. Usually I use either an *angkot* or take the public bus.”

- Vehicle emissions from *angkots* and *ojeks* – in combination with the increase of private automobile and motorcycle ownership – are decreasing the air quality in all three cities.

## INFORMAL PUBLIC TRANSPORTATION IS A BETTER BARGAIN FOR THE URBAN POOR

In many ways, informal public transportation may be interpreted to benefit the middle-class in Indonesian cities more than the urban poor. After all, higher-income people will pay a smaller proportion of their overall income on transportation, which is especially the case when fares are low. However, the urban poor benefit in three specific ways that differ from how higher-income groups access and use transportation.

First of all, the urban poor are less likely to have access to motorcycles or other forms of privately-owned mobility. In particular, the young and

elderly may have constraints on even operating a motorcycle. Therefore, the urban poor have no other alternative than either formal or informal public transportation. A key benefit the urban poor gain from IPT is options. Because there are a variety of options for mobility created by IPT providers, the urban poor actually enjoy a high degree of convenience. Secondly, the urban poor are more likely to use informal public transportation for goods and materials transport among markets. Informal public transportation therefore provides critical infrastructure for livelihoods of people in poverty.

Lastly, even though higher-income groups may spend a smaller proportion of their income on transportation, given the range of available options for mobility, informal public transportation is marginally a better bargain for the urban poor. Whereas the public bus typically costs Rp. 3,000 (US \$0.30), an *angkot* ride is Rp. 1,500 (US \$0.15). For a poor city resident, that extra Rp. 1,500 (US \$0.15) can turn into savings.



### WAITING TO FILL ALL THE STREETS

One strategy for *angkot* drivers is to wait until all the seats in their vehicle is full before departing on the route. Though this helps them earn more fares on their route, it is not always convenient for passengers.



### ADAPTING TO MEET DEMAND

*Angkot drivers modify their vehicles in many ways – one adaptation they often make is to add a rear-door, which facilitates boarding on vehicles that are not designed for public transportation.*

# PRINCIPLES FOR IMPROVING URBAN MOBILITY

## SECTION 7.0

### INTEGRATING FORMAL AND INFORMAL PUBLIC TRANSPORTATION

Distinguishing between what is formal and informal public transportation in Indonesian cities is a challenge because of just how much the two networks overlap. Farikah and her classmates, for example, all take an *angkot* to the train station on a weekend, but then some switch to public buses or BRT while others hire *ojeks*. The physical spaces in the city where these intermodal exchanges occur are important places of overlap.

#### **INFORMAL PUBLIC TRANSPORTATION WORKS WELL WHEN THERE IS “ENABLING INFRASTRUCURE” THAT ORGANIZE VEHICLES AND IMPROVE PASSENGER WAY-FINDING.**

Most of the time, these spaces are improvised – in some places this works well and in others it does not. It works well when there are “transportation facilitators” to organize vehicles and help passengers navigate the street, station, or market. Left to themselves and even in the context of antagonistic government policies, informal public transportation providers often generate this infrastructure on their own. They also organize themselves in ways that are considered “formal” by joining ranks or cooperatives. Both transportation facilitators and ranks are instructive because they offer extremely low-cost

strategies for improving the integration of formal and informal public transportation.

A possible future scenario for Indonesian cities is to integrate both informal and formal networks to respond to the diversity of transportation needs.

#### **SPACES OF OVERLAP**

Informal and formal transportation networks share the same roads, stations, and public spaces and come into contact frequently. Intermodal connections occur between buses and *angkots* and BRT and *ojeks* as well as between only two informal modes such as *ojeks* and *angkots*. Most of the time, these connections occur in improvised places since there is little or no formally designated space for informal public transportation in Jogja, Solo, or Palembang. The parking lots of train stations and malls are among the few places where space has been set aside for *ojeks* and *becaks*. Especially at Purowsari Station in Solo, designated spaces for ranks greatly reduced the sense of chaos and confusion among arriving passengers. Other connections occur in non-designated spaces like the side of the road, in front of public bus stops, or where there is a small center of informal economic activity.

#### **CREATION OF “TRANSPORTATION FACILITATORS”**

One thing that is absent in improvised spaces where

## KEY MESSAGES

### SECTION 7: INTEGRATION OF INFORMAL AND FORMAL TRANSPORTATION NETWORKS

- Informal public transportation providers create physical and non-physical transportation facilitators that make connections among modes and increase safety.
- The solutions developed by IPT providers to integrate formal and informal public transportation are low-cost and easy for local governments to implement.
- Integration of complementing services from both formal and informal public transportation serves a greater diversity of demands, including those of the urban poor, than either formal or informal alone.

intermodal connections are made are “transportation facilitators.” A basic way to define transportation facilitators is either a physical element of the built environment or a non-physical social organization that is intended “to smooth flow or provide safety to users or drivers.” (4) Local governments provide transportation facilitators to formal public transportation when bus shelters are constructed or street lanes are designated for BRT.

### ***IPT PROVIDERS OFTEN UTILIZE INFRASTRUCTURE, LIKE BUS STOPS, THAT ARE INTENDED FOR FORMAL PUBLIC TRANSPORTATION IN ORDER TO IMPROVE SERVICES.***

In some instances, this infrastructure plays a double role, serving both formal and informal public transportation. *Angkots*, for example, commonly stop at bus shelters to pick-up passengers who need to switch modes. At the same time, IPT providers create transportation facilitators of their own.

Various types of transportation facilitators we observed in Jogja, Solo, and Palembang are instructive examples of how self-organized IPT providers both improve intermodal connections and increase safety:

#### SIGNAGE

*Angkot*, *ojek*, and *becak* drivers often put up their own signage to indicate stops or rank stands. These signs make it easier for passengers to recognize and access transportation.

#### PARKING RAILS

*Ojek* and *becak* ranks in Solo negotiated with managers at the Purwosari train station to construct parking rails outside the station. These areas are assigned to ranks and the rails help to organize vehicles so they can line up in order. Near the Ampera Bridge, a parking curb was constructed to separate an *angkot* rank waiting area from street traffic.

#### OJEK AND BECAK PANGKALANG

When drivers are organized they are more likely to provide helmets to passengers and drive safely since they are accountable to the rank. However, the ability for a rank to move to respond to changing demand is an important advantage.

In Solo, the municipal government has also provided transportation facilitators that supports IPT:

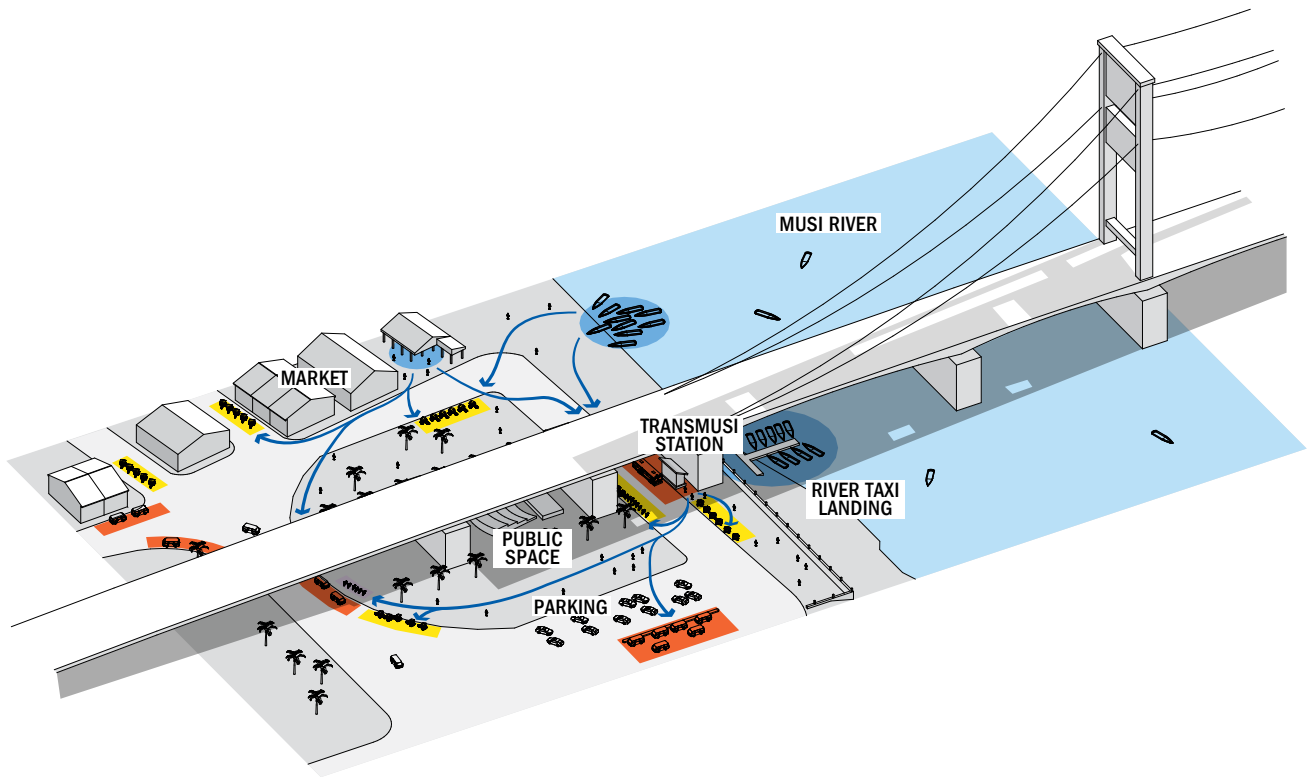
#### BECAK LANE

On either side of Jalan Slamet Riyadi, which is the primary arterial road in Solo, there is a separated lane

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(4) Arora, A. and Faizan Jawed. (2011) “Changing Perspective: Informal Public Transport in India.” Cities Development Initiative for Asia (CDIA).

## CASE STUDY: AMPERA BRIDGE, PALEMBANG



### HOW THE AMPERA BRIDGE WORKS

The Ampera Bridge is a transportation hub in Palembang where city markets meet the river and people access the BRT, Trans Musi. Ranks locate in various areas, taking advantage of the shadow cast by the bridge. The angkot rank south of the bridge is organized by curbs.

- Public Circulation
- Water Connection
- Angkot Rank
- Ojek and Becak Rank

for becaks. This lane is also used by informal food vendors and has become an active public space.

### BRT STEP-LADDER

Moveable step-ladders have been installed in some areas of Solo that are served by the new BRT, but where the city hasn't constructed permanent raised boarding platforms. Often expensive infrastructure is constructed, but later discovered to be not well-located. The BRT step-ladder are an example of low-cost infrastructure that can be adjusted based on changing demand.

### DRIVER COOPERATIVES

A variety of non-physical measures have been

developed by informal transport providers to help them identify themselves as a group and self-organize. With organization comes increased recognition by the public and local government. Like the transportation facilitators described above, organization is extremely low-cost.

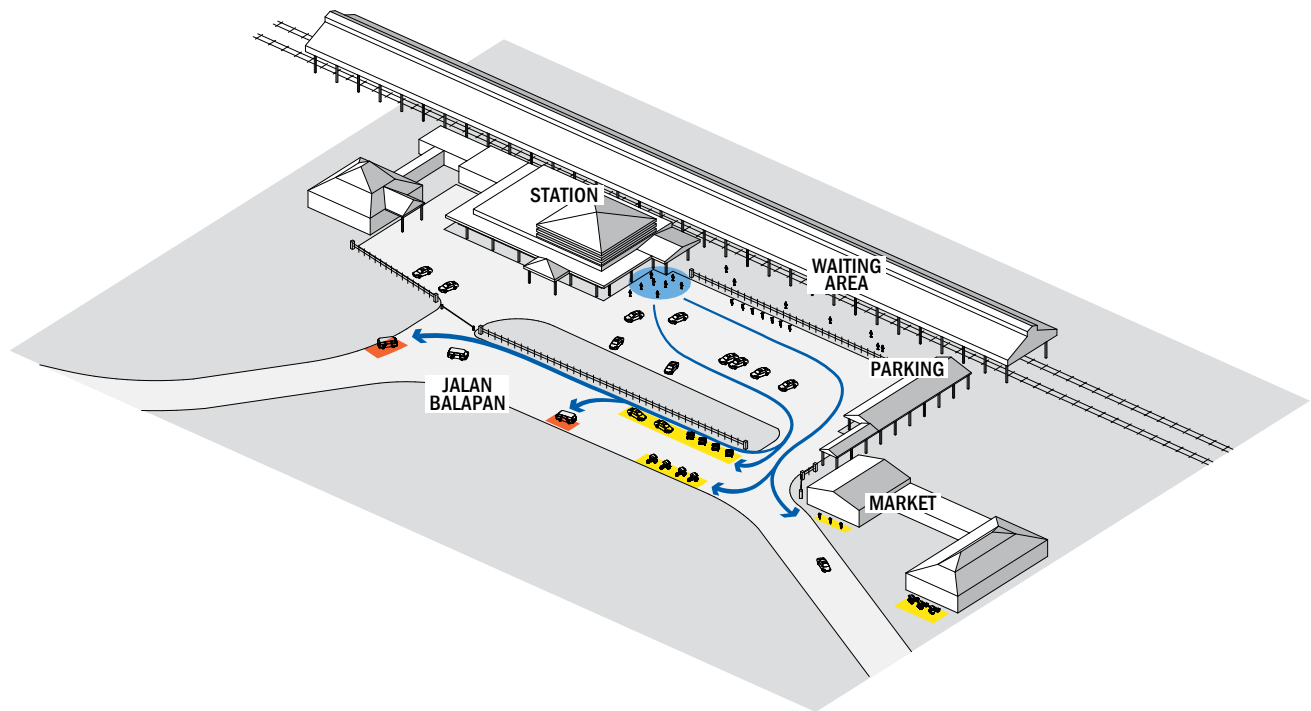
### UNIFORMS

Matching vests or t-shirts identify drivers with their rank and make them more recognizable to passengers seeking transportation.

### ID CARDS

Informal transport drivers create ID cards to establish an intermediate sort of registration with local police.

## CASE STUDY: BALAPAN STATION, SOLO



### HOW BALAPAN STATION WORKS

Neither formal or informal public transportation is accessible within the parking lot of Balapan Station. So ojek and becak ranks locate outside the station fence and angkots make stops on Jalan Balapan.

- Public Circulation
- Station Entrance
- Ojek and Becak Rank
- Angkot

While it is often not an official card, police will sanction the membership in a rank. It is also in the interest of police departments to have a relationship with drivers since they see much of what happens on the street.

### ADVERTISEMENTS

Ojek and becak ranks are often sponsored by hotels and other businesses and provide service exclusively to their customers. Sponsorship secures a market for drivers.

### WHAT HAPPENS WHEN FORMAL AND INFORMAL PUBLIC TRANSPORTATION

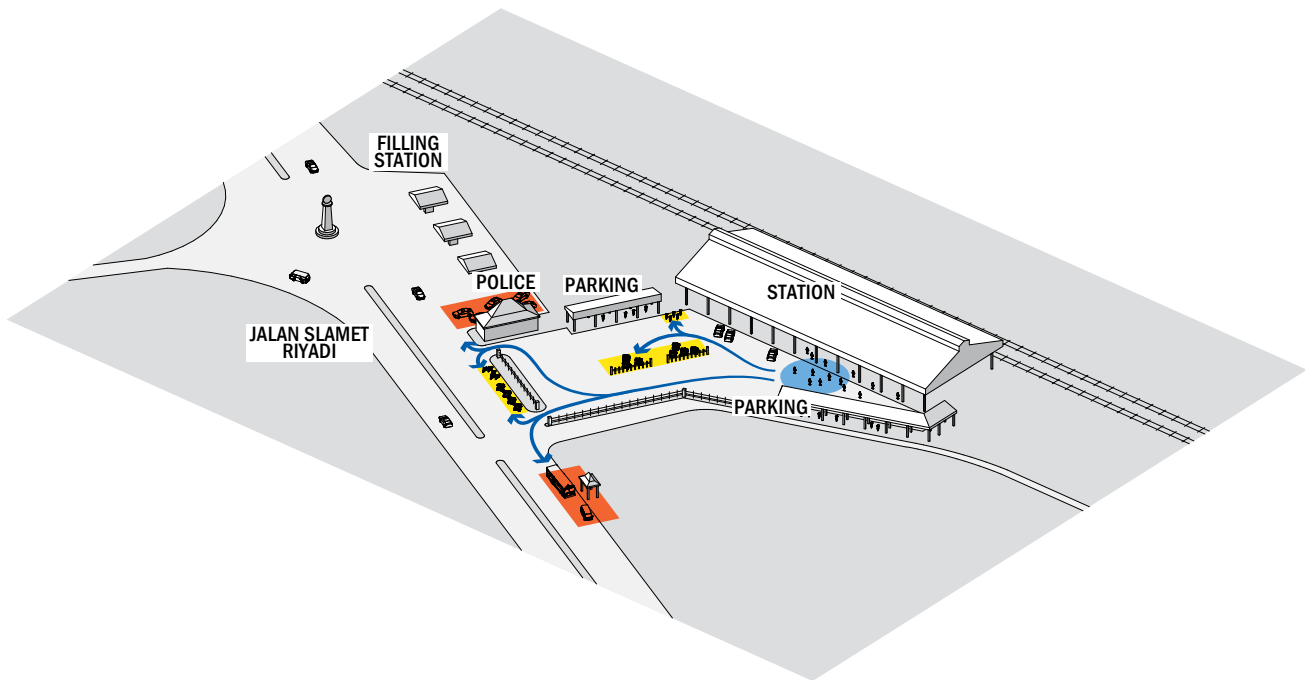
### NETWORKS CONNECT?

IPT providers – in seeking to stay flexible, fill gaps, and serve niches – are developing the kinds of transportation facilitators that are needed make connections between informal and formal public transportation. These solutions have several benefits:

- Basic infrastructures like signs and curbs make urban spaces less chaotic and safer to walk in.
- Once organized, ranks regulate themselves, which makes informal public transportation more user-friendly and increases safety for passengers.



# CASE STUDY: PURWOSARI STATION, SOLO



## HOW PURWOSARI STATION WORKS

The managers of station managers have granted permission to some ojek and becak ranks to organize within the station parking lot. However, passengers still need to walk to Jalan Slamet Riyadi to access taxis or buses. Angkots usually pick up passengers at the bus stop.

- Public Circulation
- Station Entrance
- Ojek and Becak Rank
- Taxi Stand / Bus Stop

- Ranks that provide services for sponsoring commercial enterprises like hotels – such as *becak* ride for tourists – improve business opportunities.
- An important implication for local governments in Jogja, Solo, and Palembang that are seeking to address the integration of formal and informal public transportation is that the solutions developed by IPT provide are extremely low-cost and easy to implement.
- Investing in physical and non-physical infrastructure can enable and facilitate informal providers to develop their own transportation

adaptations. When government creates infrastructure, it acts as an incentive for informal public transportation to improve their businesses and equipment since government investment makes their employment setting more secure.

## WHAT DOES IPT HOLD FOR THE FUTURE?

IPT has a role in the future of transportation in cities. Indonesian cities will continue to grow and needs for transportation are likely to increase. Growth brings with it more diversified economies and this means that transportation demands will be

complex. Informal public transportation responds to growth and changing demands more rapidly than formal transportation since this requires significant investments in infrastructure.

By harnessing the capacity of IPT providers to self-organize and offer low-cost services, IPT will continue to fill gaps where other services just are not extended. In mid-sized cities, for example, local governments are unlikely to have capacity in the short-term to manage complex public transportation systems.

However, local governments would be well served by managing a blend of formal and informal

modes that together respond to the demands of growth. The ability to manage independent and public providers in a coordinated way can offer city governments potential capacity to increase mobility while diversifying options for passengers. This could continue to serve the needs of the urban poor and maintain lower costs for government and passengers.

## PRINCIPLES

The following four principles are intended as guides to local government, development agencies, NGOs, IPT providers, and other actors who are seeking to improve the transportation

## CASE STUDY

### WHY BOTH DRIVERS AND PASSENGERS SHARE THE RISKS OF THE ROAD – PALEMBANG

All informal public transportation providers face risks on the job and very few drivers receive any kind of health coverage from employers. In fact, one reason some IPT providers said driving a public bus or BRT is attractive is that municipal employees receive health benefits. However, these jobs are few and may be out of reach for most *ojek* and *becak* drivers. *Ojek* drivers, in particular, reported problems with eye and skin irritation from exposure to polluted air on the streets. They also risk physical harm from accidents. Drivers in Palembang also said they are commonly robbed and an increasing form of theft is through hypnosis, which has been reported in others cities including Jakarta. Emergency funds provide a small



*Ojek drivers usually provide a helmet for passengers, but these vary in quality.*

level of security for rank members who are in an accident or have their vehicle stolen. *Ojek* drivers suggest that improvements in street lighting could easily help reduce the risk of robbery.

options available to the urban poor. These principles build upon the ingenious solutions the IPT providers have been developing on the ground in Jogja, Solo, and Palembang for years – using their own resources and often in the face of antagonistic government regulations.

**1) The mobility needs of the urban poor can often be met by harnessing the solutions being created by IPT providers, rather than by introducing new services or technologies.**

This report documents the many innovative approaches to meeting the transportation needs of both the urban poor and other income groups that IPT providers have developed in Jogja, Solo, and Palembang. These range from *becaks* drivers transporting goods among city markets, *ojek* drivers providing an alternative to public buses for students traveling late at night, and *angkots* offering door-to-door service for the elderly. Though new technologies such as BRT have a very important role to play in improving the efficiency of urban transportation systems, these services often lack the flexibility to meet the nuanced demands of the urban poor.

**2) Opportunities to improve services are usually found where IPT complements existing formal public services.**

There is a common perception that informal public transportation competes with formal public transportation – drawing customers

and fares away from, for example, public buses. Yet we found that many passengers are accessing both informal and formal public transportation based on changing needs day to day. One driver of the negative perception of competition is that the connections between formal and informal public transportation are so poorly organized, creating a sense of chaos in city spaces like Balapan Station in Solo.

Improving the spaces of connection between formal and informal public transportation will increase the ways in which the two systems complement one another – which they already do in many ways. Opportunities to improve these connections come in the form of basic “transportation facilitators” described in this report such as signage, curbs, and waiting areas.

**3) Initial activities should focus on the small-scale, since this is where IPT operates.**

Starting small means building on the tactics of IPT drivers and improving urban spaces that are already being used by passengers. Whereas large-scale solutions require immense resources to create and manage and serve a generic user, small-scale approaches have immediate impacts by serving specific needs. Especially in compact, dense cities like Jogja, Solo, and Palembang, demand for transportation is highly localized around markets

and shopping malls, universities, and employment districts.

**4) Regulation comes in many forms – IPT providers often regulate themselves given even a minimal level of self-organization and recognition.**

Working through existing organizations such as *ojek* ranks can be more effective and less costly than creating new regulations or enforcing existing regulations. When IPT providers organize, they often begin to regulate themselves, for example by

increasing passenger safety by providing better helmets. Encouraging this indirect form of regulation means seeking out and fostering unlikely partnerships among IPT providers and private institutions and businesses that can provide assistance for organizations through, for example, sponsorship of uniforms. When either local governments or even the private sector recognize the organization of drivers – by, for example, issuing ID cards –, IPT providers gain respect and are often more likely to work as a group to increase safety and quality of service.



#### THE CHARACTER OF INDONESIAN CITIES

*Brightly painted becak will continue to be one of things residents associate with the character of their neighborhoods – in many ways, the becak is a symbol for Indonesian cities.*

**LEFT BLANK FOR YOUR IMAGINATION**

