

Motorcycle Taxis in Jakarta, Indonesia

The Case for Recognition and Integration of Motorcycle Taxis in Jabodetabek's Transportation System

BENJAMIN PALEVSKY

Contact Information: bpalevs@design.upenn.edu

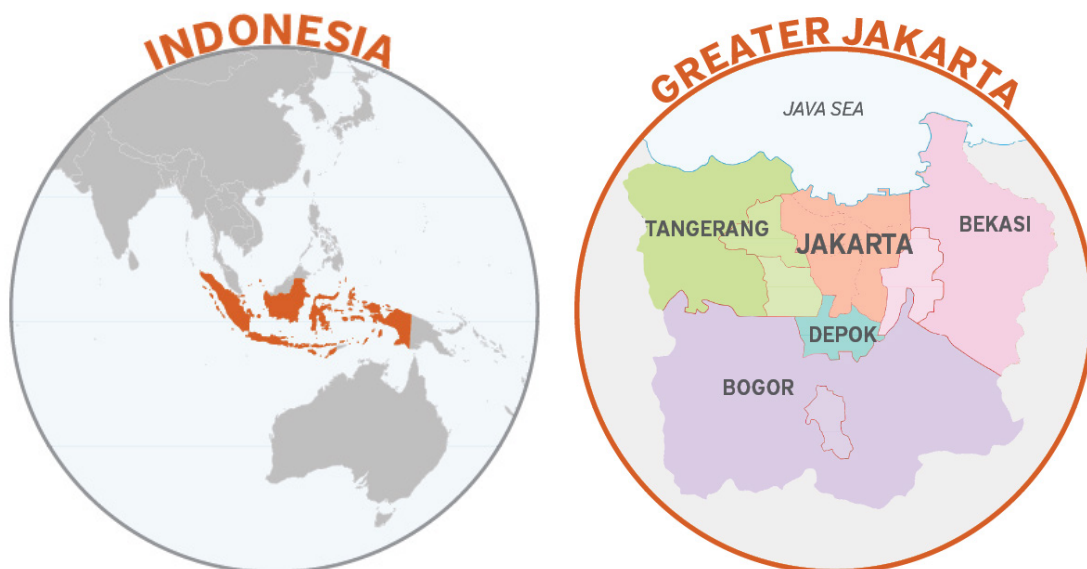
NOVEMBER 2019

INFORMALITY IN URBAN PLANNING

In the current era of global urbanization, urban life is impacted by “informality” in the areas of housing and development, social networks and support systems, economics, public health, transportation, and infrastructure. Throughout the emergence of the professional field of urban planning in the late 19th and early 20th centuries, informality was addressed with the general attitude of “other.” In many places in the world, there persists to this day an astounding lack of recognition for the vernacular characteristics and systems of the vulnerable and marginalized communities being planned for across the world. In 1975, the United Nations took an important step in addressing the challenges posed by informality in the developing world by establishing the United Nations Habitat and Human Settlements Foundation (UNHHSF), the first official UN body dedicated to urbanization. In the proceeding decades, the organization of the Habitat conferences elevated alternative viewpoints and brought these issues to mainstream. The New Urban Agenda (NUA) was adopted at Habitat III in Quito, Ecuador in 2016, and later endorsed by the United Nations General Assembly. The NUA complements the Sustainable Development Goals (SDGs), a collection of 17 goals set by the United Nations General Assembly in 2015 to achieve by 2030. In many nations, cities are leading the effort to work towards the NUA and SDGs. Jakarta, Indonesia, is one of these cities.

WHY JAKARTA?

The megacity of Jakarta is a place where the many facets of informality and informal systems converge. Jakarta is the capital of Indonesia, which is the fourth most populous nation in the world with 269 million residents and has a 5% annual GDP growth rate. Of the G20 states, only China has a faster-growing economy (Waskito, 2017). Jakarta is one of the world's newest megacities, with its population breaking 10 million in 2016 (Indonesia Statistics Bureau, 2016). The city is the economic powerhouse of Indonesia; its 10 million residents are just 3.9% of the nation's total population, but account for 17.5% of its GRP (gross regional product nominal). Jabodetabek, the megaregion consisting of Jakarta and its four surrounding municipalities, is home to over 32 million residents, up from 17 million in 1990. Indonesia as a whole has urbanized at an average of 0.7% per year in the 21st century, increasing from 47% urban in 2007 to 54% urban in 2017. This national trend mirrors global urbanization trends, as the total global urban population increased from 50% in 2007 to 55% in 2017 (Ritchie & Roser, 2018).

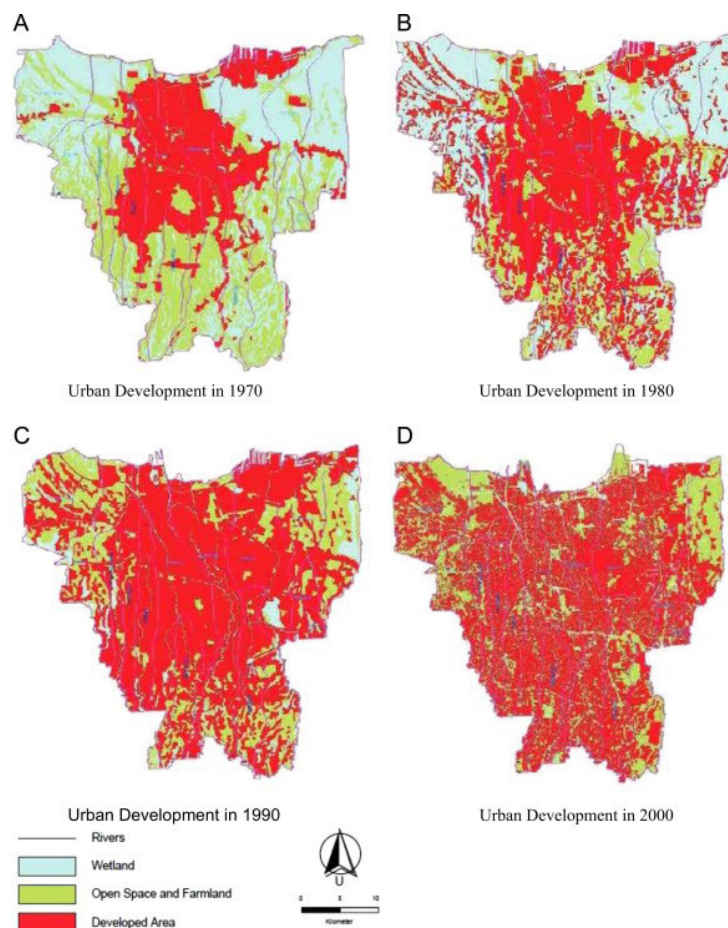


JAKARTA: BENEFITS OF URBANIZATION

Urbanization and rapid economic growth in Indonesia have resulted in an emerging middle class. According to a World Bank report in 2017, Indonesia's poverty rate has dramatically decreased in the past two decades, with two thirds of the nation's population either comfortably middle class or members of the "aspiring class" and no longer poor or vulnerable to poverty. This emerging middle class has increasing political power and will generate tax revenue required to improve the provision of public services like infrastructure, social programs, education, and mass transportation.

JAKARTA: CHALLENGES OF URBANIZATION

However, this prosperity does not come without its challenges. With such rapid economic growth and Indonesians migrating to cities in search of opportunity, much of the urban growth has been informal, as many citizens do not have the capital to enter the formal real estate market and formal economy. In 2011, 60% of Indonesia's economy was informal (Asian Development Bank, 2011). Additionally, the government has struggled to proactively plan for this growth. With Jakarta's surrounding municipalities continuing to grow, the metro area faces increasing challenges related to its informal expansion, vulnerability to climate change, informal economy, crippling congestion, and some of the worst air quality on the planet. It is important to acknowledge that informal housing, informal transport, and informal economies are not insular; they interface with people of all social classes from all across Greater Jakarta.



(Alzamil, 2017)

Congestion has emerged of one of the acute growing pains of Greater Jakarta. According to a study conducted by BCG in collaboration with Uber 2017, Jakartans spend an average of 22 days in traffic per year, approximately one quarter of which is spent looking for parking (Jakarta Post, 2017). Many residents do not have access to mass transit, and even those who do often choose private vehicles due to relative speed, reliability, and cost.

TRANSPORTATION IN GREATER JAKARTA

The Greater Jakarta public transportation network is a mix of modes with varying degrees of capacity, supporting infrastructure, and informality. These modes, with the exception of motorcycle taxis, are described in detail in the 2017 Sustainable Urban Transport Index (SUTI) report for Greater Jakarta (Jabodetabek):

- KRL (Jabodetabek Commuter Rail Line)
- TransJakarta (Inner Jakarta Bus Rapid Transit)
- APTB (TransJakarta feeder buses)
- Intermediate Bus (Inner Jakarta buses)
- Angkot (mini bus)
- Ojek (both traditional and networked motorcycle taxis)

According to the SUTI Report, the public transport service area of Greater Jakarta reached 50% in 2017. However, it considers “access” to public transportation as within a 200 km radius for regular bus and minibuses, 500 km for TransJakarta, and 3 km radius for rail. The 3 km radius from rail assumes a walk, bike, motorcycle, car, or bus trip to access rail transport. Additionally, the report also acknowledged a lack of survey data and public data about both “traditional ojek” and the emergent “online ojek” industries, Greater Jakarta’s two forms of motorcycle taxis. It also raised the issue of road safety. Greater Jakarta experienced 605 reported fatalities and over 3,000 serious injuries in 2014. Approximately three quarters of these reported fatalities occurred to motorcycle riders, which is disproportionately high compared to the motorcycle commute mode share.

Like in many other growing cities in developing countries, Jakarta has sprawled outward and become less dense. With the increasing purchasing power of the middle class, more and more Jakartans are buying cars and commuting from the suburbs. However, due to Greater Jakarta’s crippling congestion, the proliferation of the automobile is not as widespread as in comparable cities. The JUPTI (Jabodetabek Urban Transportation Policy Integration Project) Commuter Survey documented an increase of just two percent in car commuter mode share from 2002 to 2010, with a whopping 35% increase in motorcycle commute mode share during the same time span, mostly accounted for by a precipitous drop in bus ridership.

Lastly, the 2017 SUTI Report analyzed Greater Jakarta’s transport system in a spider diagram, comparing it to other Asian cities by ranking ten different performance categories related to access, safety, efficiency, operations, affordability, sustainability, and planning and expansion efforts. Jakarta performs especially poorly in traffic fatalities, convenient access, active and public transport commute mode share (excluding ojek), and air quality.

Jakartans choose motorcycles to get around because of their ability to weave through traffic and travel through alleys and areas of the city that are inaccessible to larger vehicles. The JUPTI studies did not study mode share for non-commute trips, but to give an approximation of the scale of the proliferation of motorcycle travel, assuming 63% of *all* Greater Jakarta residents take an average of two motorcycle trips per day, Jabodetabek’s congested roadways handle 40 million motorcycle trips per day.

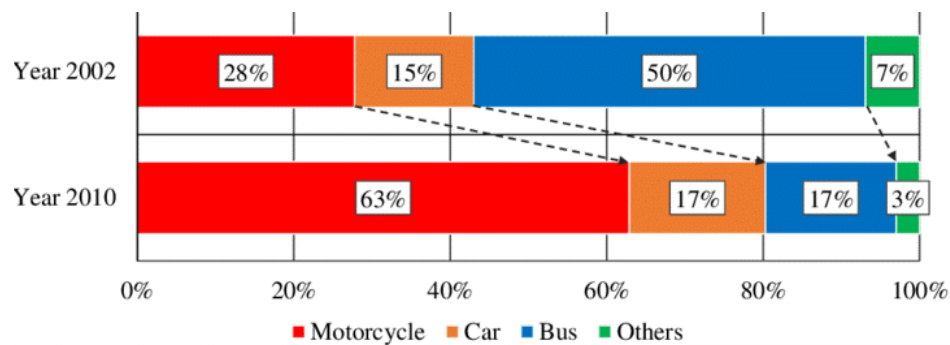
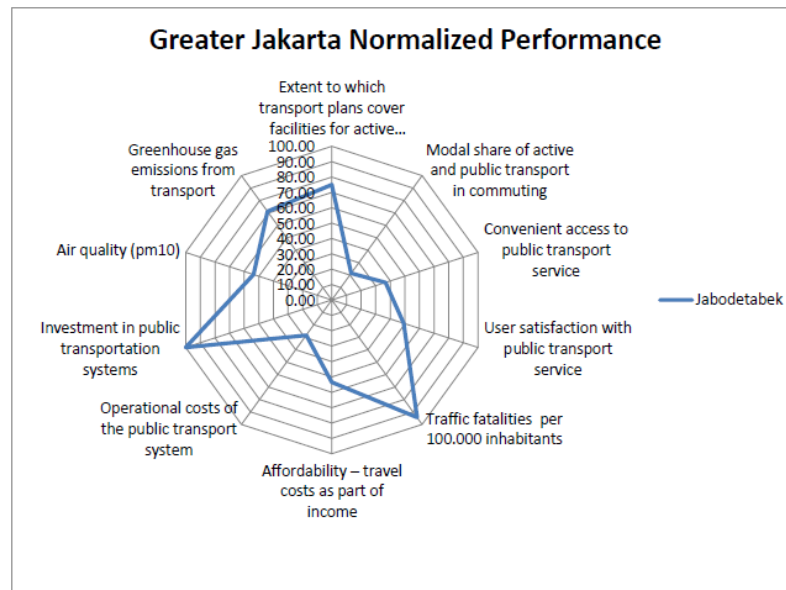


Table 1. Number of motorized vehicles in DKI Jakarta Province (in unit)

Year	Motorcycle	Passenger Cars	Trucks	Buses	Total
2001	1,813,136	1,130,496	347,433	253,648	3,544,713
2002	2,257,194	1,195,871	366,332	254,849	4,074,135
2003	3,316,900	1,529,824	464,748	315,652	5,627,124
2004	3,940,700	1,645,306	488,517	316,393	6,390,919
2005	4,647,435	1,766,801	499,581	316,502	7,230,319
2006	5,310,068	1,835,653	504,727	317,050	7,967,498
2007	5,974,173	1,916,469	518,991	318,332	8,727,965
2008	6,765,723	2,034,943	538,731	308,528	9,647,925
2009	7,518,098	3,116,282	550,924	309,385	10,494,689
2010	8,764,130	2,334,883	565,727	332,779	11,997,519
2011	9,861,451	2,541,351	581,290	363,710	13,347,802

Source: Smart Integrated Payment System for Public Transportation in Jakarta

MOTORCYCLE TAXIS—“TRADITIONAL OJEK”

An integral part of the story of the proliferation of motorcycles in Greater Jakarta has been the city's growing army of motorcycle taxis. Traditional motorcycle taxis in Indonesia, known as “ojek,” emerged in 1970 when tricycle rickshaw and minibuses were banned (Alifah Dina, 2017). The industry expanded in part due to the affordability of Japanese-brand motorcycles, and their numbers increased in the early 2000s as motorcycles emerged as a speedy alternative to car travel and public transportation for Jakartans of *all* social classes.

Despite ojek's expanding presence on Jakarta's congested streets, the Indonesian government has failed to recognize traditional ojek as a legitimate form of public transportation. In 2009, Law No. 22/2009 proclaimed ojek as "informal" transport, but did not put forth sanctions to hold users or providers of this service accountable, as the government is aware that ojek fill a transportation gap that it is currently unable to meet. Despite ojek's challenges and its lack of recognition, it remains affordable to Jakarta's poor and working classes (often cheaper than regulated public transport) and more efficiently transports patrons around the city than competing modes (Saffan & Rizki, 2018).

The lack of recognition of "traditional ojek" has implications on the drivers, the industry, and the transportation landscape of Greater Jakarta:

- There have been no official counts of ojek drivers in Jakarta
- Fares are negotiable which can result in both overcharging customers and drivers not making a living wage
- No driver registration requirement, which leads to:
 - *Lack of driver accountability*
 - *Drivers do not always provide helmets for riders—motorcycle crashes account for a disproportionately high amount of serious injuries and fatalities on Jakarta's roadways.*
 - *Discrimination against women as riders is common. Indonesian women are often victims of harassment and sexual violence on public transportation. Ojek is a male-dominated profession because of the lack of accountability for violence and discrimination against women (Tarmedj, 2019).*
 - *Territoriality and self-organization of drivers can lead to confrontation and sometimes violence, particularly targeting "online ojek" drivers (Budiari, 2015).*

MOTORCYCLE TAXIS—"ONLINE OJEK"



Around the same time as the creation of Uber in the United States, Nadiem Makarim, a native Indonesian and graduate of Harvard Business School, founded Go-Jek, a motorcycle ride-hailing app that would drastically alter

the transportation landscape in Jakarta and across Southeast Asia. Makarim started the company in response to Jakarta's crippling congestion and the rise of motorcycle transport in the city. Go-Jek was founded in 2010 with just 20 employees (Cosseboom, 2015) and rapidly grew to become Indonesia's first unicorn company. In September 2018, Go-Jek was valued at \$10 billion (Yuniarni, 2019). As of March 2019, Go-Jek employs over one million drivers and processes over three million transactions daily.

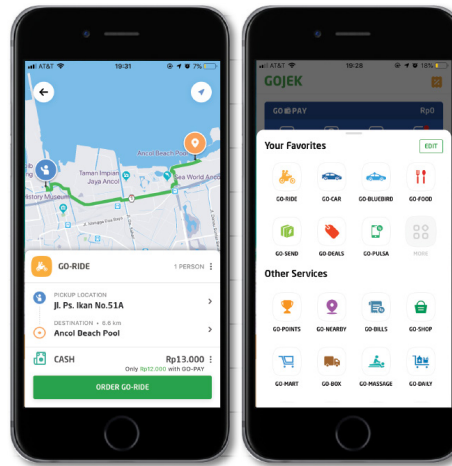
COMPETITION

Go-Jek is not the only ride-hailing company in Southeast Asia. Two of Makarim's Harvard classmates, Anthony Tan and Hooi Ling Tan, started a similar app called Grab in 2012 in Kuala Lumpur. Grab has since grown to employ 2.8 million drivers that operate more than 6 million ride orders daily. It has expanded to eight countries, including Indonesia, and it recently bought out Uber's Southeast Asian operations (Chandler, 2019). Go-Jek controls about 80% of the online ojek market share in Greater Jakarta, and Grab, after acquiring Uber's Southeast Asian operations, now accounts for the remaining 20% (Barus & Putra, 2018). In 2015, Go-Jek had 125,000 drivers in Greater Jakarta (Suhartoyo, Sonhaji, Muhamad Azhar, and Putut Suharso, 2018). This number has grown substantially since.

These two super-apps offer more than just networked motorcycle taxi rides; they also offer food delivery, digital payment services, and many other services. These services are key to the success of transportation network companies like Go-Jek and Grab as they are more stable and profitable than ride-hailing, where profits are elusive despite exponential growth of services. Go-Jek's list of products includes:

- Go-Pay
- Go-Ride
- Go-Car
- Go-Food
- Go-Food Festival
- Go-Mart
- Go-Shop
- Go-Send
- Go-Box
- Go-Tix
- Go-Med
- Go-Massage
- Go-Clean
- Go-Glam
- Go-Auto
- Go-Pulsa
- Go-Pay
- Go-Bills
- Go-Points
- Go-Play

- Go-Studio
- Go-Pertamina



Jakartans choose the motorcycle to get around because of its ability to weave through traffic and travel down streets and through neighborhoods that are too narrow for larger vehicles. Reliability and accountability issues of traditional ojek outlined in the previous section make Go-Jek and Grab more popular choices. The increasing amount of Jakartans with access to a smartphone also helped online ojek take off (Suhartoyo, Sonhaji, Muhamad Azhar, and Putut Suharto, 2018). According to a 2016 Jakpat transportation mode survey, online ojek is the most popular “public transportation” option in almost every category (price, easiness to order, quickness, safety, driver knowledge, and capability). Online Ojek was approximately ten times as popular as traditional ojek in almost all categories. It is important to note that this survey was conducted with a relatively small sample size, and while it communicates mode preference and likely roughly reflects mode choice, the results cannot be used to make any assumptions about mode choice. There is a lack of data available breaking down the proportion of overall motorcycle trips that are online ojek or traditional ojek trips.

Table 1. Online and Traditional *Ojek*’s Shares in Public Transportation Preference by Greater Jakarta Area Residents in 2016

Consideration in Public Transportation Preference	Highest Option of Public Transportation	Online <i>Ojek</i>	Traditional <i>Ojek</i>
Price	Train (28,9%)	25,8%	2,1%
Easiness to order	Online Motorcycle Taxi (58,9%)	58,9%	5,5%
Fastness in reaching destination	Online Motorcycle Taxi (50,1%)	50,1%	4,7%
Safety	Online Motorcycle Taxi (27,3%)	27,3%	2,6%
Driver’s Capability in Driving	Online Motorcycle Taxi (31,3%)	31,3%	2,9%
Driver’s Knowledge in Road Routes	Online Motorcycle Taxi (40,6%)	40,6%	6,3%

Source: Derived from *Jakpat* (2016: 14-24)

DRIVER WELFARE

According to a survey of online and traditional ojek drivers conducted by Siti Alifah Dina in 2017, online ojek drivers make higher wages than traditional ojek, and they are younger, more educated, more entrepreneurial, and more upwardly mobile than traditional ojek drivers. However, a more thorough investigation of Go-Jek's employment policies uncovers vulnerabilities of Go-Jek driver employment resulting from the "dependent self-employed" nature of their employment, as explained in the following excerpt from Alifah Dina's paper:

Based on the explanation of the three manifestations of control, it seems that Go-jek drivers are not as independent as they think. Flexibility and income-sharing might be the ultimate justification for Go-jek to support its "partnership" strategy. However, the control exercised by Go-jek through a set of work conduct by using a uniform, rating system by the customer, and frequent unidirectional change of tariff and compensation, has shown that the drivers are dependent. Adding to their dependent character, this "partner" surely will not be entitled to a set of employer benefits like insurance or overtime wage. In fact, Go-jek drivers must provide the capitals, such as motorcycle and mobile phone, themselves to be able to work with Go-jek as a partner. (Alifah Dina, 2017)

Additionally, Alifah Dina's driver interviews show that only the more successful class of traditional ojek drivers had the capital to switch to online ojek, which is more lucrative than traditional ojek in the eyes of motorcycle taxi drivers. So as the wealth disparity increases between these two parallel industries, it seems this disparity is more due to who has *access* to online ojek employment, and not because online ojek companies themselves are lifting drivers up.

LEGAL ASPECTS

In 2009, the Indonesian government passed a road traffic law that indirectly illegalized traditional ojek by setting strict safety and comfort standards for all public transport operators, and barring *individuals*, like ojek drivers that use their own motorcycles to transport passengers, from providing public transport. In 2014, a government regulation built on the 2009 traffic law, but by this point the online ojek industry had started to take off, and weak law enforcement allowed the continued rise of the industry (Bisara, 2017).

Then, in December 2015, just one week after Uber, Grab and Go-Jek were given the right to operate legally, the Indonesia Ministry of Transport banned two-wheeled public transportation. This resulted in an uproar from drivers, riders, and even the President of Indonesia, Joko Widodo, who pointed out in a public statement that this industry has grown to fill a mobility gap that the government has not been able to fill. After the backlash, motorcycle taxis were 'unbanned' a mere 12 hours after the original ban.

While traditional ojek drivers have been known to self-organize and are territorial, online ojek drivers are incentivized to organize by the prospect of collective bargaining. Online ojek drivers have organized many protests to demand higher wages and employment packages to increase job security (Jakarta Post, 2018), which culminated in the Transportation Ministry passing Regulation No. 12/2019 in March 2019 explicitly about the safety of users of motorcycles for public transport. Go-Jek and Grab were concerned about the possibility of this regulation setting minimum fares or wage rates for drivers, which could slow their expansion (Roidila Mufti, 2019). The following graphic summarizes the recent regulations put forth by the Transportation Ministry.

This regulation is a milestone for the Indonesian government in its recognition and collaboration with the online motorcycle taxi industry, but it also falls short, mainly in that it does not recognize the legitimacy of traditional ojek. Traditional ojek constitutes a shrinking percentage of the motorcycle taxi industry in Jakarta, but it is a vital part of the industry and must be acknowledged in any conversation about integration because:

Major points in app-based ojek regulation

Safety compliance

- ▶ Drivers required to ride their motorcycles properly with full concentration and be knowledgeable about their operational areas.
- ▶ Drivers should regularly check and take care of their vehicles to ensure roadworthiness.
- ▶ Drivers should wear long trousers, shoes, gloves and jackets.
- ▶ Applicators required to provide “panic button” for driver or passenger use during emergency situations.
- ▶ Applicators should ensure that drivers’ identities and license plate numbers registered on their apps comply with those in operation.

Amenities

- ▶ Drivers required to maintain hygiene and cleanliness standards and act appropriately.

Orderliness

- ▶ Drivers should drop off or pick up passengers in safe places and avoid disrupting traffic.



(Source: Roidila Mutti, 2019)

1. Traditional ojek is the most viable option for individuals without access to a smartphone;
2. The exclusion of traditional ojek would give online ojek (Go-Jek and Grab) a monopoly of the industry;
3. Traditional ojek drivers who have not switched to online ojek are the least economically well-off group of workers in this industry, and their welfare should be valued.

Additionally, the new regulation does not speculate on or put forth a vision for further integration of motorcycle taxis into Greater Jakarta’s public transportation system.

Pros	Cons
<ul style="list-style-type: none"> • driver and vehicle registration • driver conduct • road safety • congestion • requires company recognition of driver expenses when calculating wage rate 	<ul style="list-style-type: none"> • does not recognize “traditional ojek” • does not speculate on or put forth a vision for further integration of motorcycle taxis into Greater Jakarta’s transportation system

INTEGRATION INTO GREATER JAKARTA PUBLIC TRANSPORT SYSTEM

In 2018, Go-Jek signed a memorandum of understanding with MRT Jakarta, which opened the city’s first metro line in April 2019. The MoU stipulated that both companies would look for ways to integrate Go-Jek’s online payment system called Go-Pay to sell train tickets, as well that Go-Jek would use the massive amount of consumer data it has amassed to help MRT plan for what kinds of businesses would be most lucrative to inhabit new MRT stations (Tani, 2018).

While this sort of collaboration may effectively position Go-Jek as a first-last mile connector to Jakarta’s MRT network, there are two primary reasons this collaboration does not go far enough to encourage the equitable and environmentally sustainable development of the public transport network:

1. The collaboration will give Go-Jek an essential monopoly over the new first-last mile trip market from MRT stations, allowing them to undermine Grab and traditional ojek competitors, and increasing tensions between drivers and the company about minimum wage rates.

2. Online and traditional ojek compete directly with Jakarta's buses, which are a more spatially efficient and environmentally sustainable means of public transport than ojek along busy corridors. This especially applies to TransJakarta, Jakarta's BRT system.

NEED FOR GOVERNMENT INTERVENTION

Jakarta is at an important crossroads in the trajectory of its transportation system. The government has invested billions in the planning and construction of the city's metro system, and the first of two planned MRT lines opened in April 2019. The government must harness the new market for first-last mile trips to and from MRT stations to achieve goals related to ojek driver welfare, driver and passenger safety, and greater goals related to emissions and environmental sustainability.

Government intervention in the form of policy, physical planning, and enforcement is necessary to ensure the equitable, efficient, and environmentally sustainable integration of online and traditional ojek into Greater Jakarta's public transportation system.

PHYSICAL PLANNING

A pilot program should be carried out by the government to construct motorcycle taxi pickup and drop-off facilities at new metro stations that will only be accessible to drivers and companies that register with the government, whether previously recognized as formal or informal public transport, under the condition that all drivers and companies comply with new safety regulations and stay within minimum and maximum trip prices and wage rates set by each municipality to ensure driver welfare, equitable access to the service, and equal competition between Go-Jek, Grab, and traditional ojek. This registration incentive will also give the government an opportunity to impose fuel efficiency standards on drivers who want access to this new trip market. The Seattle-Tacoma International Airports' regulation of TNC miles-per-gallon minimums is one example of how government can regulate pickup and drop-off trips to and from a major transportation hub (Uber Blog, 2017).

The scale and diverse transportation options of the Jabodetabek region requires the generalizability of this pilot program to other modes of mass transportation in Greater Jakarta. The MRT system represents a huge new market for first- and last-mile trips, but even when the system is built out, the great majority of the region's 32 million residents will not live within the distance of a regional first/last-mile trip to a station. For this reason, the pilot program must be designed in such a way that can be expanded to both existing *and* proposed TransJakarta (Jakarta bus rapid transit), LRT (Jabodetabek light rail system), and KRL (Jabodetabek commuter rail) stations. It is key for the government to partner with online and traditional ojek in such a way that optimizes access to existing and planned mass transit routes. This will make Greater Jakarta far more accessible to residents who do not rely on private vehicles, whether they be cars or motorcycles, and greatly reduce per-capita transportation emissions for Jabodetabek residents.

CONCLUSION

Just as this MRT pilot project approach shall be generalizable to other modes of mass transportation in Greater Jakarta, it can be implemented in other growing cities with congestion struggles and emerging mass transportation systems. The proposed interventions directly address seven of the 17 Sustainable Development Goals, while forging ongoing partnerships between citizens, local and national government, and the private sector to help Jakarta achieve an inclusive, efficient, integrated, and sustainable transportation network.

(1) No Poverty

(3) Good Health and Well-Being

(5) Gender Equality

(8) Decent Work and Economic Growth

(11) Sustainable Cities and Communities

(13) Climate Action

(17) Partnerships for the Goals



BIBLIOGRAPHY

- Alifah Dina, Siti. "Moving Out of Poverty: Go-jek as Innovative Support for Motorcycle Taxi in Jakarta." December 2017.
- Alzamil, Waleed. "The Urban Features of Informal Settlements in Jakarta, Indonesia." October 24, 2017. Accessed May 14, 2019. <https://www.sciencedirect.com/science/article/pii/S235234091730570X#fooo05>.
- Barus, Herry, and Aldo Bella Putra. "The Market Share of Gojek Is Almost 80 Percent." *Industry.co.id*. September 06, 2018. Accessed May 14, 2019. <http://en.industry.co.id/read/6771/the-market-share-of-gojek-is-almost-80-percent>.
- Bawany, Aziz. "Introducing Uber Re-Match: A New Way to Pick up at Sea-Tac Airport." *Uber Blog*. December 12, 2017. Accessed May 14, 2019. <https://www.uber.com/blog/seattle/sea-tac-airport-re-match/>.
- Bisara, Dion. "Government Revises App-Based Transportation Regulation." *Globe Asia*. April 2017. Accessed May 14, 2019. <https://www.globeasia.com/need-to-know/government-revises-app-based-transportation-regulation/>.
- Budiari, Indra. "Go-Jek Drivers Fearing Violent Resistance from Traditional Ojek." *The Jakarta Post*. June 11, 2015. Accessed May 14, 2019. <https://www.thejakartapost.com/news/2015/06/11/go-jek-drivers-fearing-violent-resistance-traditional-ojek.html>.
- Chandler, Clay. "Grab vs. Go-Jek: Inside Asia's Battle of the 'Super Apps'." *Fortune*. March 20, 2019. Accessed May 14, 2019. <http://fortune.com/longform/grab-gojek-super-apps/>.
- Cosseboom, Leighton. "This Guy Turned Go-Jek from a Zombie into Indonesia's Hottest Startup." *Tech in Asia - Connecting Asia's Startup Ecosystem*. August 27, 2015. Accessed May 14, 2019. <https://www.techinasia.com/indonesia-go-jek-nadiem-makarim-profile>.
- France-Presse, Agence. "Indonesia's Traffic Nightmare a Dream for 'ojeks'." *Inquirer Business Indonesias Traffic Nightmare a Dream for Ojeks Comments*. August 28, 2011. Accessed May 14, 2019. <https://business.inquirer.net/15495/indonesias-traffic-nightmare-a-dream-for-ojeks>.
- Furney, William. "Spending a Day with an 'ojek' Driver." *Indonesian Business Updates*. August 27, 2000. Accessed May 14, 2019. <https://jawawa.id/newsitem/spending-a-day-with-an-ojek-driver-1447893297>.
- Harsono, Norman. "Raising Ride-hailing Fares Equally Sensitive for Drivers and Riders." *The Jakarta Post*. February 14, 2019. Accessed May 14, 2019. <https://www.thejakartapost.com/news/2019/02/14/raising-ride-hailing-fares-equally-sensitive-for-drivers-and-riders.html>.
- "History, Mandate & Role in the UN System." *UN*. 2012. Accessed May 14, 2019. <https://unhabitat.org/history-mandate-role-in-the-un-system/>.
- Blue Ocean Team. "How Go-Jek Is Creating a Blue Ocean in One of the World's ..." *Blue Ocean Strategy*. February 14, 2019. Accessed May 14, 2019. <https://www.blueoceanstrategy.com/blog/how-go-jek-is-creating-blue-ocean-one-of-worlds-most-congested-cities/>.
- "Indonesia - Urbanization 2007-2017 | Statistic." *Statista*. 2017. Accessed May 14, 2019. <https://www.statista.com/statistics/455835/urbanization-in-indonesia/>.

- "Indonesia to Regulate Ride-Hailing Rates Threatens Grab, Go-Jek Expansion." Retail News Asia. January 18, 2019. Accessed May 14, 2019. <https://www.retailnews.asia/indonesia-to-regulate-ride-hailing-rates-threatens-grab-go-jek-expansion/>.
- "Jakartans Spend 22 Days in Traffic Jam per Year: Survey." The Jakarta Post. November 1, 2017. Accessed May 14, 2019. <https://www.thejakartapost.com/news/2017/11/01/jakartans-spend-22-days-in-traffic-jam-per-year-survey.html>.
- "Jokowi Defends Ride-hailing Apps as Transportation Ministry Withdraws Ban." The Jakarta Post. December 18, 2015. Accessed May 14, 2019. <https://www.thejakartapost.com/news/2015/12/18/jokowi-defends-ride-hailing-apps-transportation-ministry-withdraws-ban.html>.
- "LRT Will Cultivate New Transport Culture, Says Bogor Official." The Jakarta Post. May 6, 2019. Accessed May 14, 2019. <https://www.thejakartapost.com/news/2019/05/06/lrt-will-cultivate-new-transport-culture-says-bogor-official.html>.
- "Merging ICT and Informal Transport in Jakarta's Ojek System." Taylor & Francis. February 13, 2018. Accessed May 14, 2019. <https://www.tandfonline.com/doi/full/10.1080/03081060.2018.1435465>.
- "More Passengers Using Public Transport to Reach MRT Stations: Transjakarta." The Jakarta Post. April 23, 2019. Accessed May 14, 2019. <https://www.thejakartapost.com/news/2019/04/23/more-passengers-using-public-transport-to-reach-mrt-stations-transjakarta.html>.
- Nanag Prayudyanto, Muhammad, Dr., and Muiz Thohir, Dr. *Sustainable Urban Transport Index (SUTI) for Asian Cities: GREATER JAKARTA AREA (JABODETABEK) INDONESIA*. Report. United Nations Economic and Social Commission for Asia and the Pacific. 2017.
- Project for the Study on Jabodetabek Public Transportation Policy Implimentation Strategy in the Republic of Indonesia (JAPTraPIS)*. Publication. Directorate General of Land Transportation, Ministry of Transportation, the Republic of Indonesia. Vol. 2. 2012.
- Ritchie, Hannah, and Max Roser. "Urbanization." Our World in Data. September 2018. Accessed May 14, 2019. <https://ourworldindata.org/urbanization>.
- Roidila Mufti, Riza. "Govt Regulates App-based 'ojek' Operations." The Jakarta Post. March 22, 2019. Accessed May 14, 2019. <https://www.thejakartapost.com/news/2019/03/22/govt-regulates-app-based-ojek-operations.html>.
- Russell, Jon. "Indonesia Bans, Then Swiftly Unbans, Motorcycle Taxi On-Demand Services – TechCrunch." TechCrunch. December 18, 2015. Accessed May 14, 2019. <https://techcrunch.com/2015/12/18/indonesia-bans-then-swiftly-unbans-motorcycle-taxi-on-demand-services/>.
- Saffan, A. F., and M. Rizki. "Exploring the Role of Online 'Ojek' In Public Transport Trips: Case of Jakarta Metropolitan Area Rail Users." *IOP Conference Series: Earth and Environmental Science* 158 (2018): 012024. doi:10.1088/1755-1315/158/1/012024.
- Suhartoyo, Suhartoyo, Sonhaji Sonhaji, Muhamad Azhar, and Putut Suharso. "Legal Aspects of PT. Gojek Indonesia in the Partnership Agreement Dealing with the Public Transport Standards." *E3S Web of Conferences* 68 (2018). doi:10.1051/e3sconf/20186802008.

- Tani, Shotaro. "Go-Jek and MRT Jakarta Team up to Boost Efficiency of Public Transport." *Nikkei Asian Review*. May 22, 2018. Accessed May 14, 2019. <https://asia.nikkei.com/Business/Companies/Go-Jek-and-MRT-Jakarta-team-up-to-boost-efficiency-of-public-transport>.
- Tarmedi, Frans. "Discrimination Against Women in Indonesia: Case of Rape in Public Transportation and Dress Code for Women." *Academia.edu*. Accessed May 14, 2019. https://www.academia.edu/19337210/Discrimination_Against_Women_in_Indonesia_Case_of_Rape_in_Public_Transportation_and_Dress_Code_for_Women.
- "The Archipelago Economy: Unleashing Indonesia's Potential." McKinsey & Company. September 2012. Accessed May 14, 2019. <https://www.mckinsey.com/featured-insights/asia-pacific/the-archipelago-economy>.
- "Thousands of Online 'ojek' Drivers Stage Rally, Demand Better Pay, Partnerships." *The Jakarta Post*. April 23, 2018. Accessed May 14, 2019. <https://www.thejakartapost.com/news/2018/04/23/thousands-of-online-ojek-drivers-stage-rally-demand-better-pay-partnerships.html>.
- Vacano, Mechthild Von. "'Sharing Economy' versus 'informal Sector' -- Jakarta's Motorbike Taxi Industry in Turmoil." *Freie Universitat Berlin* 6, no. 2 (December 2017). doi:10.7340/anuac2239-625X-3076.
- Wargadiredja, Arzia Tivany. "Female Ojek Drivers Struggle to Find Acceptance on City Streets." *Vice*. November 01, 2017. Accessed May 14, 2019. https://www.vice.com/en_asia/article/zmzmm4/female-ojek-drivers-struggle-to-find-acceptance-on-city-streets.
- Waskito, Alfi Syahrin Ario. "Indonesia's Future Lies in Its Informal Sector | Alfi Syahrin Ario Waskito." *FEE*. September 09, 2017. Accessed May 14, 2019. <https://fee.org/articles/indonesia-s-future-lies-in-its-informal-sector/>.
- Yasih, Diatka Widya Permata. "Boom in Indonesia's Ride-hailing Services Leaves Drivers in Uncertain Employment." *The Conversation*. September 5, 2017. Accessed May 14, 2019. <https://theconversation.com/boom-in-indonesias-ride-hailing-services-leaves-drivers-in-uncertain-employment-75001>.
- Yasih, Diatka Widya Permata, and Andi Rahman Alamsyah. "Can Grab and Gojek Drivers in Indonesia Build a Solid Union?" *The Conversation*. April 18, 2018. Accessed May 14, 2019. <https://theconversation.com/can-grab-and-gojek-drivers-in-indonesia-build-a-solid-union-95032>.
- Yasmin, Nur. "Finally, an Ojek Law." *Jakarta Globe*. March 20, 2019. Accessed May 14, 2019. <https://jakartaglobe.id/context/finally-an-ojek-law>.
- Yuniarni, Sarah. "GOJEK Is Indonesia's First Decacorn, per Latest Unicorn Rankings." *DealStreetAsia*. August 4, 2018. Accessed May 14, 2019. <https://www.dealstreetasia.com/stories/gojek-decacorn-129438/>.