

**GOJEK AS INFRASTRUCTURE:
STREET SMART TECHNOLOGY OF
INDONESIA**

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a) Declaration page

I hereby declare that this thesis is my original work and it has been written by me in its entirety. I have duly acknowledged all the sources of information which have been used in the thesis. This thesis has also not been submitted for any degree in any university previously.

Onat Kibaroglu

1 February 2022

b) Acknowledgements

Reminiscing my last 5 years at the National University of Singapore, I can confidently note that it has been a thoroughly rewarding journey. Starting off with a MA program in a region completely novel to me – in terms of culture, geography and academic literacy – and ending up as a prospective scholar in that particular area is an outcome that could not be attributed to solely myself. I am genuinely grateful for the rather patient and intellectually rich guidance I have received from the professors at SEAS and other departments I have had the privilege to be a student of. This dissertation would not come together without their contributions.

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street-smart
noun

“The experience and knowledge necessary to deal with the potential difficulties or dangers of life in an urban environment”.¹

Chapter 1: I. Gojek as Infrastructure

a) Introduction

In the realm of information technology, the decade of 2010s will perhaps be most prominently remembered for the exuberant emergence of the digitally native ‘platform’. This recent era saw a rapid proliferation of novel assemblages of urban mobility solutions (Uber), alternative accommodation models (AirBnB) and other marketplaces built as interactive smartphone applications. The common denominator of such platforms is their potent appeal to the ‘millennial’ generation’s proclivity to rather rent, borrow and share — than to commit, purchase and settle.

Scholarly literature on the expanding economy of platforms, however, has so far failed to fully appreciate how profoundly the phenomenon has been shaped by urban conditions (Davidson et al., 2018). Some earlier scholars have argued that digital technologies would make cities obsolete (Graham and Marvin,

¹ “Street-Smart.” In Lexico. Oxford: Oxford University, 2022.

1996), and assert that revolutions in communication will completely distort our relationship with space (Taylor, 2011). Digitally mediated sharing economy prove to be, nonetheless, practical solutions that are firmly rooted in and moulded by urban realities, as much as they are widely imagined as virtual orchestrators of electronic data through disparate mobile devices.

This introduction chapter lays out the ways in which Gojek, arguably the most eminent sharing economy assemblage put together in the Global South during the last decade, became a major urban infrastructure of Indonesia. Approaching metropolitan Indonesia's notoriously congested urban transportation scene as a chronic issue of deficient formal infrastructure and loose formal governance (Lee, 2015), Gojek conceptualised an informal urban mobility option, the hackneyed 'ojek' (motorcycle taxis) as the key to a large-scale gridlock. The digital platform was built upon the existing infrastructure of ojek which have long been moving masses of passengers and items across tumultuous settings of Indonesian cities, where motorcycles are the most efficient tool to leak through the incessant 'macet' (traffic jams).

As a vibrant and contested site of everyday practices, Indonesian cities provide a fertile ground to study the mutual dynamics of human experience with modernisation, industrialisation, digitalisation and most recently the emergence of the sharing economy. The dense nature of urban Indonesia boasts chronic inefficiencies experienced by the masses and numerous forms of 'lacking' — all of which can be latent opportunities that enterprising minds could capitalise upon. Gojek intervened into the urban milieu of Indonesia in 2015 and began to

rapidly centralise the divergent streams of ojek by tying them into a single mobile application interface. The platform took the chronic issues of urban infrastructure in Indonesian cities as an abundant habitat to thrive within — not an irksome setting to avoid — by inserting itself in the chaos as an automated and efficient dispatcher of millions of drivers. Gojek is a technological assemblage leveraging administrative software, cheap hardware, regulatory grey areas, geographic positioning systems (GPS) and a vast readily available workforce; cobbling together an everyday tool that is profoundly versatile, locally acclimatized, adaptive to shape-shifting urban conditions and hence ‘street smart’².

II. The Conditions of Possibility for the Prevalence of Gojek

The urban sharing economy both relies on and contributes to the digital skin of the city (Rabari and Storper, 2015), manifesting the virtually mediated interactions of individuals throughout a brick-and-mortar realm. This phenomenon reconstructs the relationship between individuals, firms, and markets through new widespread materialisations of ‘sharing’, allowing new avenues of research regarding how global capital reshapes the local urban

¹ Kibaroglu, Onat. “Street Smart Technology: Gojek as Urban Infrastructure.” A Modern Guide to the Urban Sharing Economy, Ed. Sigler, Thomas and Corcoran, Jonathan, August 10, 2021, 181–94. <https://doi.org/10.4337/9781789909562.00021>.

experience. Intellectual reconfigurations are required to capture the novel relationships between what is deemed ‘the abstract’ or ‘the physical’ and ‘urban territory’ or the ‘virtual space’ — inevitably prompting queries of where the global ends and the local begins as well (Davies et al., 2017).

To thoroughly decipher this shift at the macro scale would be a formidable task, therefore this dissertation is an analytical zoom into a local case study set in a salient part of the world. The prominence of the mobile application ‘Gojek’ as Indonesia’s most popular technology company demonstrates the massive commercial potential which certain frictions within urban infrastructure present and the earthbound nature of the digital sharing economy. In a sense, the platform is a key indicator of the metabolism of the Indonesian city³.

Gojek is an Indonesian ride hailing, urban logistics and digital payments platform launched in 2010. As of the time of writing Gojek’s driver fleet exceeds two million drivers who ride an array of motorcycles, cars, and rickshaws across urban Indonesia⁴; and a rapidly growing mainstream user base of almost the half the current Indonesian population. Gojek is the first ever Indonesian technology company to be widely touted as a ‘unicorn’, Silicon Valley-speak for fast growing, billion-dollar-worth private technology companies. In an informal interview during 2018 with members of the close social circle of Gojek’s founder Nadiem Makarim, the author of this chapter

2 Lehrer, Jonah. “A Physicist Solves the City.” The New York Times. The New York Times, December 17, 2010. https://www.nytimes.com/2010/12/19/magazine/19Urban_West-t.html.

4 Episode 2: Unlocking Gojek's 2 Million Drivers, GoFigure Podcast, 06 May 2019 at <https://gofigure.go-jek.com/episode/messing-with-product-engineering-operations>.

was told that the original idea of Gojek was to deliver wedding invitations across Jakarta to tap into a seemingly niche market⁵. That idea was soon scrapped and in 2010, Makarim pivoted his business model to set up a call centre for dispatching ojekes that are already scattered wide across the city. Makarim's modest enterprise, therefore, simply injected a degree of operational efficiency into a long prevalent urban practice in Indonesia through enhanced centralisation.

After 5 years from its initial launch as an offline call-center for ojekes, in early 2015, the platform launched its online presence. The call-center morphed into a mobile application which a critical mass of Indonesians could now download on newly acquired cheap smartphones, a currently ubiquitous device that was more of a luxury item at the beginning of the decade. This shift completely automated the dispatching of ojekes, compounding their operational efficiency and centralised the power over their itineraries through a single algorithm.

Gojek is at once a physical, bureaucratic, technological and social phenomenon that is simultaneously animate and inanimate, mainstream yet local and however mundane, still highly discernible. The following segments illustrate four sets of infrastructure within urban Indonesia which render it the ideal habitat such a platform to come into existence:

- A gridlocked physical infrastructure and a lack of public transportation;

⁵ See Appendix A for archival photos of Gojek's launch office filled up with wedding invitations.

- Lax governance which allow a robust street economy to prevail;
- The availability of affordable motorbikes and smartphones;
- A vast supply of precarious labour, chiefly composed of domestic migrants caught in perpetual endeavours in the informal sector.

This framework echoes Claudio Sopranzetti's (2018) illustration of the four conditions of possibility for the mainstream prevalence of motorcycle taxis in Bangkok, which lays out the ways in which the informal bureaucracy, jammed traffic, cheap labour and cheap motorcycles came together to create the ideal breeding ground for a robust motorcycle taxi network. The conditions that made up the platform of Gojek in Indonesia thus, however unique, is notably similar to many other Southeast Asian settings.

a) Physical Infrastructure

Any conversation regarding Jakarta will most certainly touch upon its notorious traffic, that is often ranked for being the worst in the world depending on which survey and year one chooses to rely on (Approximately 45% of metropolitan Jakarta is practically unreachable by a public transportation stop, which represents an area covering about 300 million square meters out of a total of 655 million square meters of metropolitan area).⁶ Rapid motorisation and lacklustre public transportation options, essentially the inability to cope with the

⁶ Nugraha, Satya. Go-Jek Engineering, 8 October 2018 at <https://blog.Gojekengineering.com/lets-fix-jakarta-s-traffic-3ca824464d22>.

demanding demographics of the city have given rise to frustrating levels of traffic congestion, engendering informal mobility solutions as the most reliable and widespread recourse for urban access across metropolitan Indonesia.

The Jakartans' key to traffic gridlock became the ojek since the 1980s onwards — the motorcycle taxis that ooze through cars stuck on expressways like water flows through merged layers of stone. Built upon this prevalent infrastructure, Gojek is a 'spatial fix' (Soja, 1989), inserting itself into the chaos induced rhythm of the city, knotting together the rough urban fabric. The founding legend of Gojek refers back to this fundamental use case of 'the ojek', in which Nadiem Makarim has his eureka moment while whizzing through clogged Jakarta traffic in destination to his corporate office.

Essentially, the ojek, and its contemporary 'digital' version Gojek, fills a vital void that is left unfilled by formal public transport providers, who often operate under protected state monopolies, lacking incentive to contain costs, have a wide reach and innovate to be able to respond to shifting market demands (Cervero and Golub, 2007).

b) Bureaucratic Infrastructure

As any other informal industry around the world, the informal transportation sector that is vividly present in metropolitan Indonesia is brought to life by precarious workers who put in long and hard hours in a highly competitive market. Since its inception in the 1970s, the practice of 'ojek' (used both as a

noun and a verb, colloquially) has always been based on various layers of bureaucratic informalities and grey areas. Thus, its translation to software, Gojek, is also inevitably built upon a certain lax and inconsistent mode of governmental administration that allows informal mobility solutions to become mainstream.

Neither the national nor local governments ever consider ojek driving as a formal activity on paper; nevertheless, this practice is perceived by the government both as a solution for urban mobility problems, and as an irreplaceable source of job creation — and hence exists mostly undisturbed on the ground. In jammed cities like Jakarta, Surabaya and Denpasar, the availability of ojek has become a vital need for citizens seeking means of travel between public transport nodes. Despite its unregulated existence therefore, this long-standing practice thrives on an unwritten social contract between the local governments, public transport authorities, passengers and drivers.

Illustratively, Gojek was banned on 18th of December 2015, by the Transport Ministry of Indonesia for being an illegal service operating without a formal public transportation permit — but only for a single day, as President of the Republic of Indonesia, Joko Widodo (Jokowi) immediately lifted the ban, in order “not to prohibit local innovation”⁷. This is indeed a telling incident that exposes how highly the platform is regarded by the Jokowi administration, as a

7 ‘Gojek Should Not Be Banned,’ Presiden Joko Widodo Says. Sekretariat Kabinet Republik Indonesia, setkab.go.id/en/Gojek-should-not-be-banned-presiden-joko-widodo-says/.

widespread and perpetual exhibition of technological success and ‘innovation’ across the country — and how ojek driving is well-embedded into the urban infrastructure of the city, unlikely to be removed by force. Another instance to note is when Gojek’s launch into Vietnam, the company’s first market outside of Indonesia, was accompanied by President Jokowi, as he perceived the expansion as a moment of national pride. Building on such political potencies, Gojek has grown to become a household name in any international debate concerning contemporary technological developments in Indonesia and hence, an indirect source of legitimacy for a government that aims to illustrate Indonesia as a resurgent technological powerhouse (Shastry, 2018).

c) Technological Infrastructure

The practice of ojek in urban Indonesia would not have reached a critical mass without the presence of affordable motorcycles. Typically, in the Global South, comparatively small vehicles dominate the informal sector, unlike city buses and trains which formal transportation tends to be built around. In Indonesia, perhaps the most common tool for making a living out of is a motorbike. The cost of motorbike ownership in Indonesia tends to be very affordable even for the urban poor, with an abundance of locally produced second-hand bikes⁸

⁸ Ghalib, Mohammad. New Suzuki Smash, Bidik Gojek, Grab Bike dan Uber, Oto Jurnalisme, 24 March 2017 at <https://otojurnalisme.com/detail/suzuki-motor/6314-review-suzuki-intruder-150-keren-atau-norak-kalau-dijual-di-indonesia>

(Japanese companies are recently offering Gojek drivers preferential rates of rentals and wholesale purchases, driving the costs even lower).

As well as motorbikes, the mainstream prevalence of a digital sharing economy requires the widespread use of smartphones, a condition that Indonesia reached around 2015 — right when the platform built its mobile application after operating as a call centre for almost 5 years. In 2013, only 24% of mobile phone users in Indonesia owned a smartphone (representing around 25 million people out of 100 million total users). This figure doubled to 53% by 2017, representing more than 80 million smartphone users, most of which reside in urban settings⁹. The key reason for such an exponential spike in Indonesian smartphone user base was the mainstream introduction of Chinese low-cost smartphone brands, Oppo and Vivo in the domestic market from the mid 2010s, and the increasing affordability of data services. According to forecasts, smartphone penetration rate in Indonesia will rise from the current 26% to 33% until 2023. The number of smartphone users in Indonesia will thus reach as high as 90 million (out of a total population of 270 million) within a couple years. Such fundamental market forces rapidly expand the reach of mobile applications to the so-called ‘bottom of the pyramid’ demographics in Indonesia.

⁹ Number of mobile phone users in Indonesia from 2013 to 2019, Statista, Accessed 05 January 2020 at <https://www.statista.com/statistics/274659/forecast-of-mobile-phone-users-in-indonesia/>

d) Social Infrastructure

Regarding the demographic conditions that construct the ideal habitat for an urban sharing economy, it is vital to note that the labour pool of informal mobility in urban Indonesia comprises of a vast supply of domestic migrants, moving around typically in circular (routinely between a few cities) or seasonal migration chains between the urban and the rural. It is a common experience of the author to observe Buginese of Sulawesi working in Bali, East Javanese working in Jakarta and Sumatrans working in the Riau Islands as Gojek drivers — often a few months stint at a time, never settling yet never completely leaving either. It has always been much easier finding an informal job than a formal one in a new city setting for a domestic migrant. Yet, Gojek's widespread presence brings down the entry barriers in the informal sector even further as the recent technology lessens importance of local knowledge concerning the urban geography and traffic rhythms, given the existence of GPS systems and traffic applications embedded into the mobile interface of the platform.

Through the deployment and training of smartphones, mass recruitment events and ease of access to relevant social connections over social media, becoming a pengojek¹⁰ is made easier than ever, creating a network effect where the supply of more drivers incentivise more users as the waiting time and prices for fares are dramatically reduced. Indeed, many Gojek drivers act as salesmen for the

¹⁰ Gojek driver in Bahasa Indonesia.

company themselves, as the author has observed throughout his fieldwork during the last two years in Indonesia. The signing up process of becoming a pengojek is streamlined through recruiter drivers who prevail in multiple WhatsApp or Telegram chat groups, not necessarily entering certain ‘offline’ social circles, which tend to have more stiff boundaries.

Another demographic condition that eases the emergence of an en-masse urban sharing economy is the phenomenon that, many Indonesians have the ability of driving a motorbike since they practically start walking — as in one interview with a driver, the author noted the self-acclaiming phrase “Indonesians tend to wear the bikes like [they] wear shoes (...sepeda seperti sepatu)”. Such a metaphor is no exaggeration, given how agile and skilled ojek drivers are in using the motorbikes in the world’s most chaotic traffic flows — albeit suffering serious long-term physical pains induced by this tedious and prosaic labour.

The overlooked skills of motorbike driving Indonesians (in most labour related publications, motorcycle driving is referred to as either ‘unskilled’ or ‘low skilled’) turns out to be a key advantage for both the workers in terms of minimising their job training duration and the companies which recruit them, maximising their available labourer pool.

Following up from this point, the next chapter details the impact Gojek has had on the Indonesian labour environment, as well as how its technology was shaped around the preconditions on the ground. A promising field of research to address these four urban conditions is the field of platform studies. Scholars in this field draws on insights from a broad range of disciplines, such as science and

technology studies (Ford and Honan, 2017; Lee, 2018), urban studies (Moertenbeck et al., 2015; Simone, 2016) and innovation systems (Amir, 2004; Hidayat et al., 2013), investigating the dynamics of change and stability in the way key societal functions - mostly regarding transportation - are fulfilled. Platforms are conceived as major players in socio-technical systems in urban settings, implying the re-configuration of policies, infrastructures, industry structures, markets, user practices, cultural meanings and essentially forms of knowledge (Lee, 2018).

The key inspiration for this dissertation comes from the observation that scholarly literature on emerging mobile platforms in the Global South has so far failed to fully capture the ways in which such platforms have been shaped by urban conditions (Davidson et al., 2018). Through dissecting how a platform like Gojek is shaped by urban realities, the following chapter aims to address the concepts of money, labour and the city within the streets of urban Indonesia. Illustrating the three phases of centralisation in Indonesia throughout the 19th to the 21st Century, the second chapter defines how 'formality' came to existence across the archipelago, inevitably creating its contrast: informality. First through colonisation, then through nationalisation and recently through digitalisation, Indonesia boasts a history of innovation that is shaped by distribution of power. Expanding its scope beyond the archipelago, this chapter also aims to demonstrate how global urban contexts are becoming translated onto virtual realms within smartphones through the influx of venture funds from an ever-expanding pool of monetary supply. The chapter shows how Gojek has

rapidly become a speculative asset which placed itself within the crosshairs of global investors with a promising narrative: A slice of equity in Gojek is a bet on the future of Southeast Asia.

The following chapter expands on three key themes of safety, certainty and mobilisation, as it demonstrates the commodification of work in metropolitan zones¹¹. Hundreds of millions of platform participants in Indonesia trust the brand of Gojek and negotiate with the platform itself, rather than directly with drivers whom they would otherwise know personally to run errands for them. This contemporary phenomenon removes the drivers' agency of determining prices and exact routes, rendering their work a fungible product.

Labour relationships has increasingly become commodified and impersonal – in other words, urbanised, as every ride is now with someone new and fleeting. Illustrating experiences from three major contexts of the Indonesian archipelago, the Riau Islands, Java and Bali, this core chapter aims to layout the practical benefits and drawbacks the platform has caused in the lived realities of the worker class. The chapter essentially argues that the precarious labour conditions in the South should be assumed as the global norm, contrary to many scholars' framings of the conditions in the North as such (Standing, 2014).

Emergence of Gojek is argued to be the most significant event in Indonesia during the last decade, shaping modern social and political power through a

11 Author's forthcoming publication as "Centralisation of Popular Economies" in the edited volume "Platformization and Informality: Pathways of Change, Alteration, and Transformation", edited by Ursula Huws and Aditi Surie and published by Palgrave MacMillan of Springer Publishing (forthcoming Q2 2022).

technologically mediated intersection of a vast labour force and the ‘urban’. The final chapter offers a new perspective on the city, putting forward the idea that the most reliable indication of being in or out of the city is the presence or cessation of the circulation of platform drivers in a particular area.

Aligning with Boissiere's (1996) identification of the city as an “...instant and logistical result in which transportation, economy, energy and politics intersect”, the mobile platform is a multi-faceted urban phenomenon that is the most vivid common denominator of everyday commutes across the archipelago. This chapter aims to illustrate that if an individual, be it a driver or passenger, happens to be in a zone in which he or she can summon a Gojek ride, that zone has practically been rendered urban, as her practical relationship with a physical space that has become impersonal, traceable and monetised.

This dissertation is an intervention into platform studies, rethinking the concept itself, especially regarding who it encapsulates and what its functional geographic boundaries are in the Global South. It is observable, through the accounts in this research, that the universal notion of a mobile platform as a tool that is confined to a smartphone device, is not sufficient in the context of Indonesia. The platform, rather, is more accurately construed as an assemblage of a vast pool of manpower, pervasive software, and volatile urban conditions.

III. Methodology

This dissertation has two main components to its research phase. One tracks an array of literatures, varying from platform, labour, urban and Southeast Asian studies, aiming to draw theories and second hand observations which illuminate the salience of Gojek's presence in Indonesia. The other main component is a years-long thread of fieldwork, beginning in the Riau Islands in 2018, touching many spots across Java, moving onto a brief stint in Sulawesi during the summer of 2019 and ultimately wrapping up during the early COVID-era of 2020 in Bali. The theoretical and practical methodologies come together to resemble the platform itself, an assemblage that could only be accessed by simultaneously interacting with it virtually and physically. Just as the platform could not be thought of without its inherent software and hardware components, this dissertation aims to have an inherent street-level practicality to it, while addressing many forms of contemporary discourse.

The methodology used in this paper for the study of the platform does not have the ambition of achieving a precise collection of purely empirical data. Instead, the research has sought to lay out the platform in terms of its often contradictory qualities, inevitably producing ethnographic accounts based on what Clifford (1986) calls partial truths. De-emphasising solemnity from ethnographies, Clifford contends that ethnographies are almost fictional, yet highly telling, regardless of their accounts' fidelity, ethnographies are salient archives and economies of truth. Power and history flow through them, in ways their authors,

who are often mere observers, cannot and rather shall not, fully control. The first-hand accounts in this dissertation, are thus best read as qualitative data that sits at the nexus of various academic disciplines, illuminating many ways in which various vocabularies, assumptions and demographic imaginaries do not necessarily translate to the hard realities on the ground. The ultimate purpose of such methodology is to obtain information that illustrates the way urban Indonesians see, construct, navigate and interpret situations, and thus informing and producing the platform in their everyday life (Martinez, 2018).

The following map illustrates at a macro-scale my journey through Indonesia collecting photographs, written accounts, oral interviews, official and unofficial documents, text messages and ultimately fundamentally significant observations that shaped the core themes of this dissertation. Beginning in the Riau Islands of Batam and Bintan, moving onto Java, Sulawesi and Bali, I have talked with a total of 20 Gojek drivers and 3 recruiters, gathering what I aim to put together a comprehensive study of how the platform is brought to existence by the urban realities of Indonesia. As the chapters progress, this set of qualitative data is presented to the reader as threads of practical truths, but also as avenues for further curiosity into the inner-workings of the archipelago's rich societal dynamics. Investigating the context and components which makes up the digital platform allows to expose the stories of the everyday tinkerers, risk-takers and craftsmen of Indonesia.

Map I: Fieldwork zones in Indonesia demarcated in circles¹²



12 The green circle mark the Riau Islands (2018), red circle Java (2018-2020), yellow circle Bali (2019-2020) and blue circle Makassar (2019). Map taken from "Indonesia Map Silhouette Isolated on Vector Image on Vectorstock," VectorStock, January 15, 2020, <https://www.vectorstock.com/royalty-free-vector/indonesia-map-silhouette-isolated-on-white-vector-28784460>.

A key question to ask before embarking on such research is whether or not the case study of Gojek is domain-specific.. Does its model represent a relevant assemblage to other forms of urban infrastructures across Indonesia, Southeast Asia and more essentially across the globe? This dissertation is designed to refer to various locations with different commercial and demographic formations, however in only a single country, across a notably diverse archipelago. Scholars who study Sao Paolo (Caldeira, 2013), Dakar (Simone, 2016) and Istanbul (Cansever, 1996) would recognise how similar the conditions in Jakarta are to their own contexts, not only in terms of physical settings but in the ways in which popular economies arise from the provisional activities to make a living (Martinez and Masron, 2020).

On the other hand, the field notes and conceptualisations around territoriality and labour related struggles arising from the observations in the Riau and Bali islands, can be read along with the works of Harms (2011), Kusno (2013) and Frey (2020). As Caldeira (2013) and Simone (2016) emphasize the provisionality of urban relations in the Global South, often drawing attention to the concepts of ‘access’ and ‘work’, Harms (2011) and Kusno (2013) think carefully around the notions of ‘space’ and ‘temporality’, exemplifying various ways in which urban contexts are contestation grounds over memories, belonging and vernacular.

Bearing such a theoretical base in mind, the reader will notice I have conducted research in 4 different zones in Indonesia. There are certain thematic and practical reasons I have chosen to include these locations. The Riau Islands,

more specifically Bintan and Batam offer a launchpad into Indonesia for anyone entering from Singapore. These islands are a mix of industrial and touristic zones, along with relatively vast spaces of agriculture. Notably understudied in Indonesian studies, they offer a fascinating composition of demographics: immigrant workers from West Sumatra who often work as cooks, drivers and guides (hence primary users of digital platforms), local fruit farmers and Singaporean tourists bring together a mosaic of urban and rural actors. It is indeed in the Riau Islands that I have conceived the idea of the digital platform being an indicator for where the city is, as described in Chapter 4.

Java and Sulawesi, on the other hand, offer key glimpses into the wide suite of transportation modalities across Indonesia, as millions of becak, motorcycles, train lines and trucks make up their busy roads. Their dense cities boast a rich context to observe how digital platforms act as capillaries in a subtle system which gets everyone to work and back every day. The experience in Bali, however, is one that is centred around the notion of ‘access’, e.g. being able to work in a certain zone in the first place. In opposite to Java, the usage of digital platforms to navigate the island’s urban zones is not the default choice of transport, rather (an often unpopular) alternative. These four are chosen to be setting that yielded observations which are representative of other cases around the world, in which the incursion and presence of digital platforms has altered urban circulations (Dubal, 2017; Rosenblat, 2018; Franco and Ferraz, 2019; Choudary, 2020).

Chapter 2: I. History of Innovation in Indonesia

a) Introduction

Urban financial infrastructure in Indonesia has been chiefly built within what Simone (2016) describes as ‘popular economies’. The valorization and exchange of goods and services in Indonesian cities have long been decentralized i.e. typically determined during each individual transaction, within each district — not through a centralized authority, single medium or prescribed price schedule. Production of value within popular economies’ financial webs are dependent on spatial contexts, personal relationships and demographic dimensions. This generates an intriguing profusion of informal fiscal systems which are improvised, maintained and controlled by the people — hence the apt expression, ‘popular economies’.

Popular economies have widely been referred to as ‘informal markets’ in labour studies literature till recently (Hart, 1973; Charman et. al 2014; Rothenberg et. Al, 2016; Dürr et. Al, 2019; Benanav, 2019) and are the urban frontiers (Moertenbeck et al., 2015), most vividly (though not exclusively), of the Global South. Ever since industrialization and concurrently the formal bureaucratization of the archipelago’s financial circulations began in the 19th Century, Indonesians have been determining their own informal financial regulations, creating popular versions of asset speculation, property

securitisation, safety nets, debt swaps and derivative markets. The birth of informality in Indonesia could be traced to the codification of particular practices: formal labor contracts, banking, property and land registry, taxation et cetera i.e. governmentality (Foucault, 1976). This fundamental configuration in the way a government views its own people create the notion of being ‘in the system ’or ‘outside of it’ — initiating the co-production of a new bureaucratic formality and an informal populace (Sopranzetti, 2020). It was the creation of the system that established a space outside of it; a space in which state officials, corporations and the people themselves incessantly negotiate each other’s roles, agency, degrees of influence and mere presence. Exploiting and expanding the multi-dimensionality of the spaces and the precarity of the relationships they dwell within, urban popular economies have long converted houses into day-time shops, factories into overnight hotels, offices into makeshift residences, gyms to gathering venues, mattresses into vaults, friends into trusted debtors, familial relationships into insurance policies and motorbikes into work tools — all depending on the time of the day, season of the year, trajectory of the economy and the available set of job opportunities.

Popular economies are often observed to crop up on the fault lines and margins of central control (Moertenbeck et al., 2015), most clearly within transient urban networks and infrastructural frontiers. Indonesian cities have long been sites of such socioeconomic fault lines, where a significant portion of the population have come to rely on personal relationships in their immediate localities to get access to informal forms of work, assets, debt and insurance — instead of

expecting everyday financial necessities to be reliably provided by a central node of power. Financial transactions within popular economies tend to be cash-heavy and non-traceable, allowing the cost of labour to be determined through perpetual bargaining between providers and buyers, rather than third-party corporations, digital algorithms or bureaucratic command.

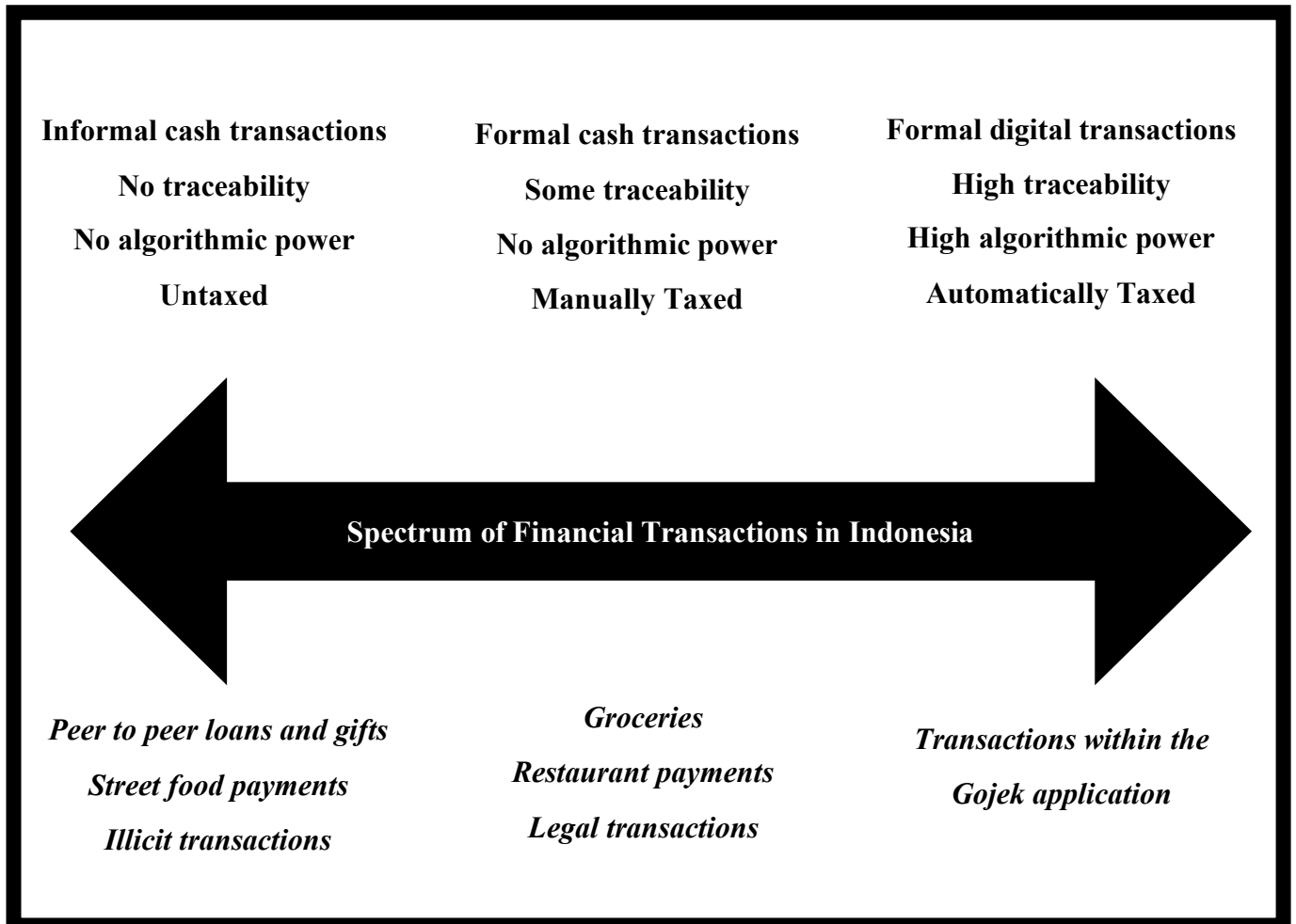
Since the last decade however, the traditionally decentralised financial infrastructure of urban Indonesia has been increasingly showing signs of centralisation. Through a mainstream adoption of mobile connectivity in the last decade, popular economies are rapidly being translated onto the digital realm and reconfigured into being facilitated by an oligopoly of private corporations. The key driver of this significant trend can be traced to be the swelling prevalence of Gojek's technopolitical power in a variety of ways across the streets of Indonesia. Since the smartphone application launched in 2015, most of the urban population came to rely on third-party algorithms to determine the price of labour and provide them access to financial instruments.

The circulation of money in urban Indonesia is hence becoming predominantly centralised, digital and traceable. French anthropologist Marc Augé (1995) coined the neologism 'non-place' to describe places that are not a destination but spaces of passing; lacking meaning and history, with which humans do not experientially relate to in an intimate sense. Viewed in that particular framework, Gojek can be observed to catalyse a fundamental societal shift as it emigrates workspaces into a virtual dimension, rendering labour to be bought

and sold in a ‘non-place’¹³; outside the confines of familiar faces and localities. This chapter tracks the ways in which the technopolitical intervention of the platform shifts decentralized popular economies of Indonesia into a highly centralized, granularly traceable, algorithm-driven marketplace. As “...infrastructures are composites of human and non-human agents that all translate each other and are not fully controlled by anyone” (Jensen, 2020), all forms infrastructure lay upon a spectrum of being highly decentralised to heavily centralised:

12 Transforming Spaces Through Portability: A New Sense Of Place.” Ignant, March 26, 2020. <https://www.ignant.com/2020/03/25/transforming-spaces-through-portability-a-new-sense-of-place/>.

b) Spectrum I: Financial Transactions in Indonesia



The framework for this chapter is set upon the socioeconomic origins of innovation in Indonesia, as explored as a genealogy in the following sections. The first section of this chapter traces the early stage industrialisation of the archipelago through its first technological frame of railways. Illustrating the concurrent birth of formality and informality, the history of industrialization in Indonesia is a key thread to follow in the quest for comprehending popular economies. As the colonial mercantilists translated Java, Sumatra and Kalimantan's agricultural and logistical circulations onto a steam-powered network, they also spearheaded the centralisation of commercial activity into urban centres. The mass mechanization of labour through the development of steam-powered supply chains across the 'Dutch East Indies' was not only ground-breaking in the literal sense, but also in regard to governmentality, most notably with the advent of central nodes of bureaucracy.

The second section dives into post-colonial Indonesia — a young, enthusiastic nation with a yearning for self-sufficiency in its productive abilities. Applying various ideological frameworks, Indonesian policy makers attempted achieve an industrial base through a centralised distribution of economic resources as the country fluctuated between protectionist and liberal phases. This built up a state exerted formal financial infrastructure which was highly centralised and skewed towards political allies of the regime.

The rather unchecked nature of the financial circulations in Indonesia throughout the 20th Century created severe systemic fragilities, paving the way to the infamous 1998 crisis. The crisis had a multitude of ripple effects across

the nation, rendering it an unavoidable event to dissect in any discussion regarding modern Indonesian history. This particular section approaches such a pivotal era by deciphering its role in swelling the street economy across urban centres, tracing how losses in manufacturing translated to gains in informal services. The section also conceptualizes inovasi (innovation) in the context of Indonesia, following how the word transformed, influenced and led the country towards nationalistic ambitions of technological excellence.

Building on that point, the third section delves into the inner makings of the services industry in Indonesia, locating popular economies as a web of human relationships and commercial circulations in which local innovations stem from. Gojek is one of such innovative models, which this chapter delineates as a form of digital, centralised, traceable financial infrastructure. Bankrolled by global streams of capital, the platform is demonstrated to be the ultimate force of centralisation of societal circulations in Indonesia.

II. Centralisation of Agriculture

a) Plantations and Railways

It might be considered as a haphazard attempt to point out a single event which sparked off 'industrialisation' within any given place, as such a concept is more accurately conceived as a historical continuum than an over-night event.

Throughout history, certain eras which see parabolic increases in task efficiency and labour productivity tend to be pin-pointed as the beginning (or a particular next phase) of industrialisation. As such, the construction of railways which connect key production nodes of an island-wide commodity chain serving a global market is an apt reference point for the initiation of early stage industrialisation. The first signs of wide-scale industrialisation and centralization on Java Island appeared when the colonial Governor General Baron Sloet van den Beele¹⁴ initiated the first railway line¹⁵ in the Dutch East Indies, by breaking ground for a terminal station in Kemijen village, Semarang in 1864¹⁶. The idea to construct a railway network initially had indeed come from Colonel Van der Wijk during 1840 when he proposed to the Dutch East Indies metropolitan government to build a Semarang-Surakarta-Yogyakarta line which was designed to cover the hubs of Dutch colonial plantations in Java.

A century older than the republic itself, Indonesia's railroads have an extensive and crucial history. Building the first mechanized network across the archipelago's most populous island led to a turbo-charged generation of hyper-efficient plantations, state bureaucracy, factories and urban centers, all of which centralised the flows of goods, services and people towards certain commercial hubs. This significant development unleashed unprecedented forms of labour,

14 The colonial governor was operating under the auspices of the Nederlandsche Indische Spoorweg Maatschappij (NIS) company.

15 "142 Tahun Stasiun Ambarawa - Wisata Sejarah Kereta Api Indonesia". heritage.kereta-api.co.id, Kompas. 23 May 2015.

16 Appendix B for photographs taken on this specific line during the author's fieldwork in Java from 2018 to 2020 of this still busy route.

advances in productivity, societal structures and ultimately the funneling of profits into ‘the colonial metropolis’¹⁷.

The local labour base in Java became commodified into a task-oriented, time-regulated army of workers toiling around the clock in relentless plantation work — representing a fundamental shift of labour patterns from their previous temporal frame of being pegged to seasonal harvests and natural patterns of rain and sunlight. The sustained development of railways in Java during the 19th Century was essentially a creation of a cost-efficient logistics web for Dutch plantations’ cultivation gains¹⁸, an infamous system imposed by the colonial government from 1830s onwards upon the archipelago’s native population for more than a century. This era also inevitably saw a vivid power shift from feudal landlords, local kingdoms to colonial mercantilists, the Dutch (Kartodirdjo, 1974).

b) Mechanization of Labour

The Dutch translated Javanese agricultural production and logistics networks which traditionally flowed through river transportation channels into an industrial realm of railways, steam engines and global entrepôts. In a

17 ‘The metropolis’ refers to the capital city of a colonial power ,as for Dutch East Indies, Amsterdam. Further literature: Germani, Ian. “Review of Boittin, Jennifer Ann, Colonial Metropolis: The Urban Grounds of Anti-Imperialism and Feminism in Interwar Paris”. H-Urban, 2010.

18 Originally named cultuurstelsel.

traditionally decentralised island, all roads now led to Batavia¹⁹. Batavia, also called Batauia, in the city's Malay vernacular, was the capital of the Dutch East Indies. The area corresponds to the present-day North Jakarta, Kota Tua (“Old City”). ‘Decentralised’ in this particular context refers to the relatively scattered social mobility patterns, agricultural production hubs and natural transportation nodes. Until the colonial era, Java boasted discrete focal points of economic and political power, which were all brought under a foreign rule that funnelled the island’s rich resources towards the ports of Surabaya and Batavia.

The railway network in Java, Kalimantan and Sumatra rapidly expanded into the first half of the 20th Century and as by 1939, the total length of railways throughout the archipelago reached 8,157 kilometers. This was a significant growth from its ground-breaking line that only spanned 25 kilometers (indeed, the 1939 figure is even higher than Indonesia’s current active rail network of approximately 6,000 kilometers²⁰). This era of labour commodification, supply chain centralisation and hyper-efficient agricultural production — essentially frontier capitalism — enabled the Dutch colonialists to expand their profitable business model of plantations throughout the inland areas (Pretel, 2019).

Frontier capitalism typically refers to the commodification of nature and the creation of labour markets and logistical webs in a new colony. Coffee, rubber,

19 See Appendix C for photographs taken in this area that is now a touristic attraction in the national capital, by the author’s during his fieldwork in Java from 2018 to 2020.

20 Parama, Mardika. “The Rise, Fall and Resurgence of Indonesia's Centuries-Old Railroad System.” The Jakarta Post, August 16, 2020:<https://www.thejakartapost.com/news/2020/08/16/the-rise-fall-and-resurgence-of-indonesias-centuries-old-railroad-system.html>.

quinine, cocoa, cotton, nutmeg, pepper and other commodities that were exotic to the European market began to be grown in unprecedented speed and industrial scales. This first phase of industrial revolution in Indonesia established a novel technological frame (Hill, 1988)l which transformed a feudal labour base into a mechanized task-force.

Such fundamental developments within the labour force reconfigured the demographics of the archipelago and imported the notion of existing either ‘in or out’ of a novel bureaucratic edifice. As such, the dichotomy of ‘formal and informal’ emerged, ushered in through implementation of written contracts, worker unions, centrally collected taxes and identity cards (Hill, 1988).

It is imperative to note though, the Dutch East Indies colonial government did not necessarily aim to completely overhaul the societal dynamics of the Indonesian population, but often opted to translate its legacy ‘political machinery’ towards its own commercial interests through a sufficient dose of centralisation, bureaucratisation and enhanced efficiencies (Kartodirdjo, 1974). Such new technological frames are most strikingly discernible in such eras of capitalist penetration into tropical lands which promise lucrative gains. Dutch penetration in the islands of Java, Sumatra, Sulawesi and Kalimantan throughout the 19th Century was one of such interventions, often cited as the beginning of the archipelago’s ‘modernisation’.

Building on such fundamentals, when Indonesia became an official nation state in 1945 with the declaration of independence from its colonial shackles, it went onto immediately nationalize its railways, transferring the vital network’s

control to the Djawatan Kereta Api Republik Indonesia (locally known as ‘Persero’). Under national administration, the network did not grow for the most part, as the 900 km of rail tracks vanished during the Second World War was not replaced²¹.

Under the leadership of Sukarno, Indonesia’s first president, many sets of rail networks across Jakarta, Semarang, and Surabaya were torn up, as the administration believed²² that rail transportation hurt becak²³ drivers (Setijowarno, 2008). It is notable that Sukarno had also tried to modernize the rail system by ordering 127 new locomotives in 1953 and 1954, despite his decision to shut down urban trams. The government did not continue its unmethodical railroad revitalization program following the hyperinflation and economic demise of the early 1960s — disrupting most infrastructural projects dreamt up for the young nation.

Railroad development plans continued to be kept in the back burner during the leadership of Suharto as well, who came to power in 1965. Suharto’s first five-year development plan (Repelita 1969-1974), explicitly stated that the

21 During the 1940s the length had been reduced to 5,910 kilometers as the invading Japanese army demolished or removed parts of the railway network to aid their rapid (and short-lived) colonization of Burma during the Second World War — Niken, Prathivi. “Trip to the Past: The History of Indonesian Railways.” The Jakarta Post, October 6, 2013. <https://www.thejakartapost.com/news/2013/10/06/trip-past-the-history-indonesian-railways.html>.

22 Parama, Mardika. “The Rise, Fall and Resurgence of Indonesia’s Centuries-Old Railroad System.” The Jakarta Post, August 16, 2020. <https://www.thejakartapost.com/news/2020/08/16/the-rise-fall-and-resurgence-of-indonesias-centuries-old-railroad-system.html>.

23 See Appendix D for the authors’ photographs of becak (three-wheeled pedicab), an urban mobility vehicle still used in urban Indonesia, especially in Sulawesi, albeit with a nostalgic demeanour.

Indonesian railroad system did not need to be revitalized and even needed to be cut in size²⁴ (President Suharto was more focused on developing the automotive industry and many railroad networks were closed while road networks expanded).

Despite such setbacks and non-maintenance, railways in Indonesia never ceased to constitute a significant form of the archipelago's overall infrastructure and as Tjahjono Rahardjo (2020) puts it "...without the railroad system, [Indonesia] would probably have had a different history"²⁵. As much as they are often neglected in the historiography of the nation's development journey, it would be accurate to claim that it was the societal shift precipitated by the proliferation of railways that most clearly indicated the first wave of technopolitical centralisation across Indonesia. The century-long plot of local agricultural resources and natural logistical channels being reframed and streamlined as 'value-chains' towards capital accumulation is therefore an imperative corner-stone of the Indonesian industrialisation experience.

24 Parama, Mardika. "The Rise, Fall and Resurgence of Indonesia's Centuries-Old Railroad System." The Jakarta Post, August 16, 2020. <https://www.thejakartapost.com/news/2020/08/16/the-rise-fall-and-resurgence-of-indonesias-centuries-old-railroad-system.html>

25 Parama, Mardika. "The Rise, Fall and Resurgence of Indonesia's Centuries-Old Railroad System." The Jakarta Post, August 16, 2020: <https://www.thejakartapost.com/news/2020/08/16/the-rise-fall-and-resurgence-of-indonesias-centuries-old-railroad-system.html>

Centralisation of Manufacturing

a) Nationalization of Financial Infrastructure

Fresh off an independence victory against the centuries-old Dutch rule, the 1950s under President Sukarno proceeded with the centralisation of infrastructure and bureaucracy in Indonesia. As an exhibition of an incoming central force, large avenues were carved²⁶ through metropolitan areas to direct traffic flows²⁷ towards central nodes (Merrillees, 2015), young men were systematically conscripted towards building a strong national army (Chandra and Kammen, 2002) economic resources of the archipelago were diverted towards the burgeoning post-colonial capital where they would be reallocated within a state budget by a young polity of bureaucrats.

The total number of Indonesian bureaucrats by late colonial era of the 1920s were at around 115,000, a figure which grew to over 400,000 throughout the formational era of the 1950s (Evers, 1987). As such, Indonesia inherited a significant stock of civil servants from the colonial edifice, who had well absorbed and got accustomed to a number of legacy Continental bureaucratic

26 "...the newly built monuments to Sukarno's vision of a modern Indonesia, Sarinah, Jakarta's first department store (still under construction), the new Japanese-built Hotel Indonesia, and the new Russian-built Senayan sports complex for the Asian Games with the Gelora Bung Karno stadium." — Witton, Ron. "Review: Jakarta, Mon Amour." *Inside Indonesia*, February 16, 2016. <https://www.insideindonesia.org/review-jakarta-mon-amour>.

27 See Appendix E for photographs taken in the 1950s' rapid infrastructure development era of Jakarta.

norms and legislations during the Dutch colonial era. Nevertheless, the colonialists' indirect style of rule resulted in not as many of these norms being heavily sedimented within the society and the bureaucratic polity. Many native sultans and regents in Java and other islands continued their traditional style of rule, adapting it contextually only to meet whatever demands might be imposed by their colonial "superiors" (Smith, 1975). This enabled the construction of the nation on a rather fresh slate of public administration in the post-1945 era. The institutionalization of 'formality' was thus arguably a national affair in Indonesia.

State bureaucracy, perhaps the most essential apparatus of modernization within the formation phase of a nation, has been the primary tool towards achieving financial record-keeping and efficiency models in Indonesia (Gaus, 2017). The central government through the deployment of its own national currency, banking system and export-import policy, affirmed its position as the main facilitator of a nascent manufacturing base which would ideally usher in an era of much needed technological development across the archipelago. Putting the nation's young contingent of bureaucrats to work, revolutionary president spear-headed the groundwork of the national financial infrastructure as a central bank was created along with three new state-owned development banks, all constructed with the claimed mandate of fuelling and disciplining an export-oriented growth trajectory for Indonesia (Nitisastro, 2011). A second phase of industrial revolution swept across the archipelago in the post-colonial era with

such financial support mechanisms, primarily skewed towards the proliferation of mass production of non-agricultural products within factories most notably in the Riau and Java Islands (Smith, 1996). This early trend can also be read as a formalization of supply chains and the creation of a national bureaucracy, creating the notion of being in and out of a formal financial system.

The Sukarno regime, however, could not achieve a sustainable trajectory of economic development despite such institutionalization attempts, as it lacked the ability to generate a value-added manufacturing base which would bring in significant export revenues. The autocracy actively discouraged manufacturer companies to export through allowing unfettered access to domestic credit for the already land-wealthy²⁸ ‘pribumi’²⁹ families, sidelining the traditional commercial prowess of the Chinese Indonesians. In hopes of formulating a ‘national’ bourgeois class, Sukarno’s policies rendered the national production base internationally incompetent and closed-off to global capital and innovation flows. The Sukarno regime licensed many new private banks to lend unconstrained amounts of credit to a wide consumer base while borrowing from a rather undisciplined central bank — a vicious circuit void of necessary checks-and-balances (Studwell, 2014). This misbalance was the result of an hyper-centralisation of money flows in the economy which created serious fragilities in the financial infrastructure. Inefficiencies which these fragilities imposed

28 Typically non-innovative and non-merchant profile of local landlords.

29 People considered to be indigenous, often referring to local Javanese and other Bahasa speaking communities.

upon the formalized productive sectors of agriculture, manufacturing and services (i.e. chronic unemployment) were ‘fixed’ perpetually through the incessant continuation of enduring forms of financial transactions (i.e. peer-to-peer lending and borrowing). Thus quaint set of activities across popular economies were now deemed to be ‘informal’ — as they were left outside of a record-keeping state apparatus. This is also not to assume the ‘formal’ infrastructure itself was clearly discernible as a particular entity. Early stage local politicians and bureaucrats often attempted to manage the newly forming national economy by establishing complex systems such as multiple exchange rates for the Rupiah across different islands of the archipelago, inevitably easing the path of smuggling goods and facilitating the continuation of off-the-record economies (Nordholt, 2011).

b) Liberalization of Financial Infrastructure

A multitude of bureaucratic and policy related experiments sparked off an economic meltdown in 1957, which only cooled off to a certain extent with the 1965 coup d’etat. The infamous coup brought in Suharto, who was an ally of the United States and a champion of liberal economic policies. In his initial years, Suharto’s capitalist policies is widely claimed to throw away the ‘dead soil’ that rested over the long closed-off Indonesian economy as inflation was tamed and interest rates were pulled down from exuberant levels (Thee, 2012). This overall narrative of optimism and stability — which neglects the tragedies

that was perpetrated by the junta regime during 1965 (Kammen and McGregor, 2012) — could be traced to the much awaited opening up of the Indonesian economy to global financial circulations. Unlike Sukarno, who throughout the 1950s and early 1960s, closed off the nation to imports and had no real plans in developing an export base that would communicate, transact and meaningfully interact with the rest of the world economies, the Suharto era carried the semblance of a ‘free market’ system that was undeniably well-surrounded by statist motives.

This time around though, it was the opening up policies — not closing off — that was taken to the extreme level. Suharto’s inconsistent, heavily over-leveraged, credit-fueled and often impatient policies — which tended to be determined by personal relations rather than economic objectives — rendered the Indonesian government unable to pick and choose certain winner export industries, the winner companies within those particular industries, protect these winner companies, grow them and gradually let them compete on at global scale. To inform his centralised policy making, Suharto flew in a group of expatriate Indonesian economists from the University of California, Berkeley to take the driving seat of nation’s economy, a group which came to be widely known as the “Berkeley Mafia”. The Berkeley Mafia tended for orthodox, one-size-fits-all liberal economic policies, and had little interest in focusing on garnering domestic entrepreneurs in value added sectors. Bringing in foreign multinational companies to operate across critical sectors, the Berkeley Mafia’s

top-down policy making disabled local entrepreneurs to grow within a protected environment and take off onto the competitive export stage. Opening up the economy to foreign competition pre-maturely, the Suharto regime ended up not being able to teach its nascent domestic industries to run at pace with their already grown global counterparts.

Arguably diligent in their choices regarding public spending and in fine-tuning certain macro-economic indicators, the Berkeley Mafia economists, however, were rather too cautious in investing in value-added export industries and state-led science and technology initiatives (Nitisastro, 2011). Later on in his regime during the early 1970s, Suharto became close with the German-trained engineer BJ Halie. In admiration of his vision for making Indonesia a high-tech industry country, Suharto appointed the ambitious Habibie as the Minister for Science and Technology, with unprecedented access to the state budget (Amir, 2004). Once again though, the overall economic policies went too far, too soon and became too centralised. Skipping the necessary phases of industrialisation which any large developed nation went through, regardless of era or region, the top brass of the Indonesian policy-makers wanted to 'leapfrog' into the developed economy league by funneling the national budget into high profile national projects. Such as building a national airplane (Industri Pesawat Terbang Nusantara, IPTN) that would demonstrate the prowess of 'Indonesian technology' (Amir, 2004). In 1976, Habibie was made Chief Executive Officer of the state-owned enterprise Industri Pesawat Terbang Nusantara (IPTN).

In such a context, the autocratic leader Suharto fluctuated between favoring ‘the engineers’ (the BJ Habibie camp) or ‘the economists’ (the Berkeley Mafia), inducing a high-level competition between the two groups of autocrats throughout the last two decades of the New Order era of 1980s and 1990s (Amir, 2004). The rivalry resulted in inconsistent policy making, where no single state project was patiently institutionalized (through a right amount of fiscal discipline), nurtured (with the right set of funds and manpower) or protected (for the right amount of time from foreign competition). This disunity and improvised nature of the central financial policy maker stalled the growth of a robust Indonesian manufacturing base (Doner et al., 2005). In an era where its direct competitors across the region³⁰ were building solid industrial value-chains, the youthful, eager, yet socioeconomically unmoored Indonesian nation was outpaced in both export competitiveness and creative capabilities that would impel innovation.

Essentially, the root cause to why Indonesia lacked the ability to build a sustainable, high value added export industry that would employ a significant portion of the population could be traced to inability of the central state polity to generate entrepreneurial and economic incentives to innovate and compete globally. Many rich ‘industrialists’ in Indonesia, unlike their counterparts in

30 Referring to PR of China, South Korea, Taiwan and to a certain extent even Malaysia, with its modestly successful automobile venture — Binte Ali, Nur Arafah. “An Analysis of Malaysia's Automobile Industry: Case of Proton.” National University of Singapore, Department of Southeast Asian Studies, 2003.

South Korea, Japan and more recently China, were often granted concessions to own banks and domestic monopolies of staple goods³¹ without being obligated to contribute to the technological development of the country. Where Koreans and Japanese raced their ‘chaebol’ and ‘keiretsu’³² first against each other, and then the world, the Suharto regime simply dispensed favors to its local conglomerates without exposing them to global contestation.

Such habits concocted the chronic incompetence of local industries in comparison to their Northeast Asian counterparts³³ and engendered a highly fragile and corrupt centralised financial infrastructure. The incessant dispensing of favors to political allies and the delegation of ‘economic sectors’ to confederate businessmen by the regime was an across-the-board phenomenon, and it inevitably included how money flowed within the banking industry. This was essentially a ‘neat-circle’ of cronyism that connected the country’s largest credit sources to its largest set of domestic monopolies. In a frenzy of unchecked centralisation of the financial system, Indonesian banks were used by the regime and its close allies as piggy banks. Bubbly levels of speculative investments and unfettered credit sourcing to dead-end projects (such as Suharto’s son’s local

31 Ever since this era, the richest local families of Indonesia are still the owners of Djarum (cigarette producing conglomerate) and Indomi (noodle brand) — “Indonesia Rich List.” Forbes. Forbes Magazine, 2020. <https://www.forbes.com/indonesia-billionaires/list/>.

32 Local terms for ‘big conglomerates’ in Korea and Japan, respectively.

33 Especially in heavy industry, which never really took off in Indonesia at the large scales of South Korea, Japan and China.

car initiative IndoMobil) exposed the so-called Asian Tiger's³⁴ seemingly 'growth-oriented' economy to a potential external shock.

c) Krismon³⁵

The external shock did indeed come around, with dire consequences. A seemingly domestic crisis of the over-exposed Thai banking industry during 1997, rapidly kindled a region-wide wildfire of economic destruction across much of Southeast Asia. The region's growth and prosperity stalled, only to be recovered to its pre-crisis rates a whole generation later. The crisis was so severe in Indonesia that it caused massive public upheavals all across its islands, which immediately translated into political instability and violence — and soon enough, the fall of the decades old political regime (Sidel, 1998). The fairly steady trend of increasing productivity of Indonesian manufacturing (which was notably prone to oil crises, as demonstrated in the couple of year-long dips in production levels during the late 1980s and early 1990s) was now fundamentally disrupted with the severe triple blow effect of 1998 Asian Financial Crisis and the political chaos which ensued it and China's rather sudden emergence as a global industrial power as of 2001³⁶.

34 A common term in the West during the early 1990s to refer high-growth inducing economies of East Asia.

35 Short for "Krisis Moneter", common reference to the 1998 crisis in Indonesian.

36 Referring to when China joined the World Trade Organisation. Even though China had clear indications of development before this particular date, the rate of industry-induced growth following this date was unprecedented, arguably, in human history.

The 1965 political crisis is coupled, inevitably, with the vibrant legacy of Sukarno, and the 1998 Asian Financial Crisis is often referred to as 'the key cause' to the end of Suharto's 30 year rule over the archipelago. Although the two crises' principal actors, ideological zeitgeist and global context are seemingly disparate, both crises were precipitated from the same two lacks. The failure to exercise control over the financial system and the inability to incentivise high value added 'export-discipline' across its agricultural, industrial and service oriented sectors rendered attempts at either a socialist or a capitalist form of centralisation of financial power to practically fail.

The macro-economic indicators of the 1998 Krismon were dealt with quite rapidly, at least in regard to overall 'unemployment' and 'growth' figures in a matter of a year or so. GDP growth, which crashed severely to negative 13%, bottom-out and recovered back to positive levels just next year, mostly due to the induction of the IMF bailout funds into the economy (Thee, 2012).

What is perhaps most important in this phase transition is what happened in the employment front, as the 'informal' street economy absorbed the bulk of unemployment in urban contexts due to its low entry barriers — serving as a de-facto and imperfect fix — a 'safety valve' perhaps — to keep matters from getting worse. This resulted in the prevalence of 'sticky' low-quality jobs to this day, where the jobs lost to the 1998 crisis never really came back in the same fashion. Blue-collar factory jobs that had unionized bargaining power and

certain levels of formal insurance and leave benefits gave way to precarious street hawking or ojek driving jobs, which at the time, most presumably, perceived by many as a temporary solution to bring food to the table (Ford, 2011).

These ‘temporary’ jobs stuck on through, becoming widespread ‘crafts’ ever since. Losing their lustre and global competitiveness, the centralised nodes of industrial employment across Indonesia gave way to decentralised vectors within the street economy, as many blue collar workers became pengojek³⁷, mobile street hawkers and ad hoc, seasonal construction workers. Swelling the reach, size and the imperative role of popular economies, the 1998 crisis thus left a deep scar in the formalization and bureaucratization of the labour relations in Indonesia.

d) Inovasi

Due to the first and second industrial revolutions’ relatively late arrivals³⁸ in Indonesia, the peak points of such developments coincided with the global emergence of the ‘third industrial revolution’. Computer technologies became integral to manufacturing processes from the 1970s onwards as such strides

³⁷ Motorcycle taxi driver in Bahasa Indonesia.

³⁸ Large factories and export industries that captured a significant share of the GDP in Indonesia were mostly founded throughout the 1980s in Indonesia, around 70 years later than ‘leading’ regions such as Japan, the United States and Western Europe.

towards dematerialization of manufacturing rendered all hardware, media and assets to be translated onto ‘software’ (Negroponte, 1995). ‘Technology’ and ‘digitality’ are much more pronounced within the third industrial revolution than ‘manufacturing’ and ‘trade’ — propelling a quest for building local innovative companies that demonstrate not only export competitiveness, but creativity, excellence in customer experience and ultimately, a high-tech demeanour. Defined as the ‘inclusion or introduction of new things; renewal; new inventions that are different from those that already exist or which have been known before (regarding ideas, methods, or tools) ’by the Grand Indonesian Language Dictionary³⁹, innovation (inovasi) has become a common phrase within the academia, industry and government circles as a key goal of the ‘triple helix development model ’since the mid-2000s. In order to trace the genealogy of the term ‘inovasi’, it is therefore useful to reconcile its industrial origins (Amir and Yanuar, 2013).

Up until the late 1960s, Indonesia have not been able to build up comprehensive, export-oriented industrial base. The severe lack of capital accumulation (thus savings rate) became a chronic issue in the economy as the oligarchic family businesses which controlled core sectors often moved their large gains to Singaporean, Hong Kongese or Swiss bank accounts⁴⁰. After the regime change

39 Kamus Besar Bahasa Indonesia (KBBI), (2019).

40“Regarding corporate conglomeration, Claessens et al”s (2000) survey of nine East Asian economies in 1996 found that Indonesia had the most concentrated ownership patterns in 1996, with the top family owning 16.6% of listed corporate assets, and the top 10 families owning 57.7% of the total”. Hill, Hall. (1997), Indonesia”s Industrial Transformation, Institute of Southeast Asian Studies, Singapore.

in 1965 and the general liberalisation trend it brought about, Indonesia experienced significant industrial growth up to the massive crisis of 1998⁴¹. During the 1998 crisis, the industrial sector contracted by 15% at about the same rate as the economy, with import-substituting local industries being the most affected. The crisis exposed the inefficiencies and non-competitiveness of such industries and without their lineal lobby power (given the political breakdown) and flow of government subsidies, many were shut down (Phyo, 2012).

Albeit its general liberalization tendency, it is important to note that the New Order had continued the import-substitution strategy of the protectionist Sukarno era in certain industries to reduce exposure to global competition and maintain local jobs until the mid 1980s. Many protective tariffs and foreign investment restrictions remained in place, only to be shaken up by the falling global oil prices which reduced government revenue — hence the sparse amount of capital to subsidize a potential manufacturing base⁴². Indonesia therefore experienced an ‘ ambivalent ’ era between 1960s till 1980s, where foreign direct investment (FDI) was allowed at the end of 1960s, and then relatively detained during the 1970s, before being opened up again during an era of trade and investment reforms of the 1980s caused by an oil crisis (Smith, 1996). There

41 Annual industrial growth was at least 9% in all but two of the 27 years, 1970-1996”. - Hill, Hall. (1997), *Indonesia’s Industrial Transformation*, Institute of Southeast Asian Studies, Singapore.

42 Fujita, Natsuki and James, William E. (July, 1989), “Import Substitution and Export Promotion in the Growth of the Indonesian Industrial Sector” . *ASEAN Economic Bulletin*, Vol. 6, No. 1.

was essentially no straight 10 years of a single policy play during this era that was patiently nurtured and continued to observe any of its meaningful results. The quasi-cyclical nature of 1980s oil crises prompted a shift from import-substitution to boosting exports through devaluation of the national currency and inviting foreign direct investment (FDI). Such reforms triggered a significant amount of technology diffusion from foreign firms that had now started to penetrate the country's manufacturing ecosystem. Gaining acceleration from the this time on⁴³, labour-intensive industrial exports gained a significant amount of traction and the industrial sector evolved from the production of simple consumer goods such as tobacco and palm oil to a wider range of relatively more technologically sophisticated products (Wie, 2012). It is at this inflection point that the word *inovasi* begins to permeate certain nodes of public discussion and academic articles⁴⁴.

Since the distinct steering away from a protective economy model in 1980s, the Indonesian government has typically encouraged joint ventures between domestic firms and foreign companies in a bid to spur technology transfer from abroad. This approach has a continuous legacy on how Indonesian policy makers imagine 'innovation'. Since the mid-2000s the government started to give greater emphasis to innovation in the formulation of economic policies. In 2005, the word '*inovasi*' appeared in a governmental policy document for the

43 Hill, Hall. (2000), "The Indonesian Economy", Cambridge University Press, Cambridge, 2nd edition.

44 Pedit, Nyoman Suwandi. (1979) "Mencari Inovasi". Gugung Agung.

first time, within the “National Long-Term Development Plan: 2005-2025”⁴⁵. The word ‘inovasi’ surfaces in five different sentences throughout the document, often referring to the overall idea of implementing certain standards in order to compete on the global scale: “...the global competitiveness of the economy needs to be continuously developed and improved by relying on increasing productivity and innovation that is managed sustainably through continuity in improving human resource capabilities⁴⁶...the development of SMEs and cooperatives is directed at developing into competitive economic actors through strengthening entrepreneurship and increasing productivity supported by efforts to increase adaptation to market needs, utilization of innovation results and application of technology⁴⁷... applying appropriate technology in production systems, and implementing Total Quality Management (TQM), and the development of functional linkages of innovation systems to encourage institutionalization as an integral part in the development of its business activities⁴⁸... utilization of marine resources must be followed by national policy support, technological innovation and improving the quality of human resources⁴⁹... increase the mastery and utilization of science and technology through research, development and application towards continuous innovation...”.

45 "Rencana Pembangunan Jangka Panjang Nasional Tahun 2005 – 2025". 2005.: <https://data.go.id/dataset/rpjpn-tahun-2005-2025>

46 Page 30, Section 1

47 Page 31, Section 1

48 Page 32, Section 1

49 Page 42, Section 1

The phrases FDI⁵⁰ and 'innovation' are often used in tandem in recent policy documents, rooted in the ambition of becoming a more 'competitive', 'technology-driven', and 'knowledge-based economy', exemplified in the "Masterplan for Acceleration and Expansion of Indonesia's Economic Development" (2011), the "National Medium-Term Development Plan" (2015) and the "Masterplan for National Industrial Development" (2015)⁵¹. It is also noteworthy that the Indonesian word for 'engineering', 'rekayasa', is often used together with 'inovasi' ('rekayasa inovatif', 'rekayasa untuk inovasi' etc.) in such documents, suggesting an overall technocratic approach to 'innovate' by policymakers. This can be read in line with the fact that research & development (R&D) expenditure in Indonesia has predominantly been flowing into government-oriented engineering initiatives, with government agencies and public universities accounting for 80% of the total R&D expenditure as of 2015⁵².

Despite such various governmental efforts since the early 2000s, Indonesia has not been able to sustainably centralise its various innovation policies and establish a single high-level body with the responsibility to oversee and coordinate what is often referred to as 'national innovation'. Centralisation of

50 Page 39, Section 3

51 Ministry of Research and Technology (2016), 'Strengthening the national Innovation System for national Competitiveness', presentation in a seminar by national Research Committee: 'Synergy among Higher Education Institutions, Research, and Business Through Innovation for national Competitiveness', Surakarta.

52 Aminullah, E. (2015), 'learning, R&D Intensity and Economic Prosperity in low R&D Countries (IRDCs): Envisioning the Indonesian Future', paper presented at the ASIAIICS Indonesia, 15–16 September 2015.

innovation related policies in a sense, kept oscillating within a spectrum of being on the forefront of the government's attention, to being at the back-burner — contingent on the particular policy makers and overall political climate. In 2010 for example, the National Innovation Committee was set up to assume this function, yet was dissolved amid efforts by the following presidency within its efforts to revamp the bureaucratic polity, setting back efforts to harmonize innovation policies at the national level. Later, the incumbent Indonesian government launched the Sistem Inovasi Nasional (SINAS), based on the Medium-Term Development Plan of 2015–2019 as their primary mean for centralising the management of Indonesia's innovation capacity and science and technology performance. Overall, perhaps due to their highly government-centric nature which did not touch base with the grassroots potential of the nation, many such initiatives for spurring innovation have long been poorly coordinated⁵³.

Given the absence of a formal, integrated national innovation strategy which would catalyze the potential of the Indonesian people into reality, most relevant policies, grants and platforms that have been provided by the government have been sporadic, short-lived, and prone to be discontinued in the event of a crisis or change of administration. Observed on a more granular level the implementation of innovation related policies is scattered across various

53 Hidayat, D., M. Simamora, and D. Prihadyanti (2013), 'A Review of the Indonesian National Innovation System', *Innovation System in Southeast Asia*, pp. 17–52.

ministries, universities, institutions and agencies, as there is no single national innovation coordination agency to harmonize all such initiatives. Given such context, it could be argued that the word 'inovasi' has not been potent enough to inspire a certain collective imagination and vision in regard to policy making industrialisation in Indonesia, as the phrase has not been able to move beyond the status of a 'buzz-word' that decorates several government documents. It is noticeable that the pitfall in realizing Indonesian ambitions regarding 'technological sovereignty' is the lack of coherence, patience, and selectiveness in creating an ecosystem for 'innovation'.

The word 'innovation' is intimately linked to engineering (be it industrial or software), while being absent in discussions regarding grassroots solutions within popular economies. The next section explores the ways in which being considered an archetype of "innovation" immediately unlocks government recognition, regulatory support, financial investments, as in the case of Gojek. This section illustrates how obtaining the status symbol of being "inovasi nasional" soothes the level of friction a novel solution experiences in its struggle for existence. As an astute model which germinated within the popular economies of urban Indonesia, the legacy ride-sharing model of *ojek* has long

been targeted by state authorities for being a nuisance⁵⁴ and a unlawful⁵⁵ practice, yet its software engineered translation is now widely perceived as an artefact of "national innovation". This peculiar dissonance often paves the way to inaccurate historiographies of local technologies which assembled their functionalities and basic business models in the intricate webs of popular economies across urban Indonesia.

54 Malawani, Ajree D., Salahudin Salahudin, Zuly Qodir, Mohammad Jafar Loilatu, and Achmad Nurmandi. "The Evolution of 'GOJEK' as an Indonesian Urban Mobile Ride Hailing Model Study Case: Public and Government Regulatory Responses on Urban Mobile Ride Hailing." *Communications in Computer and Information Science HCI International 2020 - Posters*, July 2020, 429–38. https://doi.org/10.1007/978-3-030-50732-9_56.

55 Ojek as public transportation that is contrary to Law no. 22 of 2009 on Road Traffic and Transportation that is still in force in Indonesia.

IV. Centralisation of Services

a) Popular Economies in Contemporary Urban Indonesia

In assessing an economy such as Indonesia's, in which informal transactions (referring to non-traceable and untaxed exchanges) are noticeably more prevalent than formal ones, the vocabulary in referring to such phenomena gains significance. Although it is widely considered that up to 70% of the Indonesian labor force makes a living through informal means⁵⁶, it is imperative to bear in mind the on-the-ground reality in which an individual may be a formal employee by day and an informal worker by night⁵⁷. Most ojek drivers tend to have more than one job: many drivers that were interviewed reported having part time jobs as security guards, hospital clerks, cooks or tourist guides. Some have noted their hobbies, such as drag racing during the wee hours to make some cash on the side or street food peddling depending on the appeal of weather and swelling of urban crowds in particular areas. Drivers' technology savviness that enables them to interact with the platform is observed in other

56 Rothenberg, Alexander D., Arya Gaduh, Nicholas E. Burger, Charina Chazali, Indrasari Tjandraningsih, Rini Radikun, Cole Sutera, and Sarah Weiland. "Rethinking Indonesia's Informal Sector." *World Development* 80 (2016): 96–113. <https://doi.org/10.1016/j.worlddev.2015.11.005>.

57 Gojek: Delivery workers struggle in Indonesia. Retrieved October 22, 2020, from <https://libcom.org/blog/gojek-delivery-workers-struggle-indonesia-28062019>

crafts as well. Savirani and Mustika (2020) found out in their fieldwork that 49% of their Gojek driver respondents ran small online businesses.

Drivers of the platform thus, tend to be involved in traceable, accountable, taxable transactions in one setting and in ad-hoc, non-documented exchanges in another⁵⁸. This leads the observer to seek dynamic, not static, ways of thinking, in order to accurately depict the true nature of financial infrastructures in Indonesia. This analysis opts for the term ‘popular economies’, as it unlocks a wider frame of capturing the various ways in which informality exposes itself within the wider socioeconomic fabric. Popular economies, given their thick complexion, operate across an array of bodies and materials that are intimately related to each other (Simone, 2018) — in some occasions perpetually, in some occasions only for a single stint.

Positioning the role and weight of popular economies is vital in understanding the overall urban fabric of Indonesia, given the sheer size of employment opportunities they provide and the robust financial volume they consistently boast — Badan Pusat Statistik in collaboration with the Asian Development

58 “Some sold food in front of their houses, others supplemented their income with work as couriers for market goods required before shubuh prayer at 3am, or provided washing and ironing services... “I promote my catering service on WhatsApp groups and made orders by request. I made some extra money on this and it is good business, though it is very tiring to cook compared to being on the road”. Ibu IR (43 years old), interviewed 23 July 2020. Another interviewee works as a GOJEK driver and a farm labourer in a rural area of Kulonprogo, in western Yogyakarta): “After shubuh pray calling, me and my husband went to help our neighbour who need helps giving pesticides or cleaning their farms. I get home at 8am and rest a bit and leave at 9am. My husband is a GOJEK driver too, so we leave together” — Savirani, A., & Mustika, W. (2020, October 22). "My kids need me, but we need money too": Female GOJEK drivers in Indonesia.<https://melbourneasiareview.edu.au/my-kids-need-me-but-we-need-money-too-female-gojek-drivers-in-indonesia/>

Bank estimates the share of small enterprises — which tend to be overwhelmingly informal entities — within the GDP to be around 40%⁵⁹.

Owing to their flexible, mobile and decentralised nature, popular economies perform vital economic functions within the Indonesian socioeconomic infrastructure⁶⁰. Popular economies emerge from and thrive within financial crises, infrastructural collapses and political turmoil, displaying features of anti-fragility (Taleb, 2012). Gaining from disorder and a lack of central power, popular economies create and perpetuate irreplaceable network effects that serve a vital role in urban societies. Urban informal networks, for example, allow wide and comprehensive access to credit — albeit at higher and arbitrarily determined interest rates — to small borrowers who would otherwise be left without it⁶¹.

Popular economies, however, are inherently structured around antagonism and conflict, be it explicit or implicit (Simone, 2016). As such, the globally dispersed environs of popular economies are sites of societal upheaval, exuberant inequality and abrupt migratory movements (Moertenbeck et al., 2015).

59 Asian Development Bank. “The Informal Sector and Informal Employment in Indonesia.” *COUNTRY REPORT 2010*, 2011, doi:ISBN 978-92-9092-243-8.

60 “Survey results suggest that in 2009, nine in 10 informal enterprises from either Yogyakarta or Banten did not apply for a bank loan. In Yogyakarta, the main reason cited for not doing so is that they are ‘not interested’ at 25%, while in Banten, the complicated procedures associated in getting loans hindered 35% of the informal enterprises from applying for loans” — Montiel, Peter J., et al. *Informal financial markets in developing countries: a macroeconomic analysis*. Blackwell, 1993.

61 Firdausy, Dr. Carunia Mulya. “The social impact of economic crisis on employment in indonesia.” Centre for economic and Development Studies-Indonesian Institute of Sciences, 2000, www.ismea.org/asialist/Firdausy.html.

Considering their multitude of facets, popular economies cannot be dismissed as merely opportunistic, problematic, rudimentary or anachronistic. Indeed, popular economies are not unregulated as they are often thought to be⁶², as they indeed self-regulate and guide their own forms of financial transactions. Distant familial ties, complex friendships, mutual dependencies, long-rolling liabilities to suppliers, prospects of ad-hoc sales to outsiders and unexpected twists of fortunes are typical societal vectors in which people come together in hopes of benefitting from each other's capabilities and quite often, loopholes in formal infrastructures (Moertenbeck et al., 2015).

One of such loopholes is found in Gojek's centralised incentive system, which is commonly tricked by a method widely known between the platform drivers as 'hoax GPS'. The method goes as follows: to be able to receive payments for their rides, all drivers always need to keep at least 50,000 rupiah in their Gopay (Gojek's financial technology brand) accounts, as this creates a reserve liquidity which Gojek's algorithm taps into when deducting a 20% commission off each ride-hail. After topping up this amount, trickster drivers remove the computer chips embedded in both their helmets and jackets⁶³ and put in rigged computer chips into their gear instead. These rigged DIY chips install (or sync with)

62 "At the economic level, the term applies to incomes whose generation is 'unregulated by the institutions of society, in a legal and social environment in which similar activities are regulated' —Mörtenböck, Peter, and Helge Mooshammer. "Spaces of Encounter: Informal Markets in Europe." *Architectural Research Quarterly* 12, no. 3-4 (2008): 347–57. <https://doi.org/10.1017/s1359135508001267>.

63 Demonstration videos are readily available on driver forums/social media accounts and the method is widely confirmed during my fieldwork conversations all across Indonesian cities; See Appendix F for photographs of the replacement of the computer chip within Gojek gear.

malware in their Gojek applications and automatically start completing fake rides to exploit the company's impersonal (anonymously operated) bonus system. The malware, for example, completes 5 fake rides worth 9,000 each on their Gojek app (a typical price for a 10 minute ride) and the platform algorithm deducts 1800 from each ride (20% commission). A total of 9,000 commission is transferred to the central Gojek account, while the algorithm pays a bonus of 25,000 for the 5 rides completed (typical daily incentive amount).

Therefore a trickster driver can make 16,000 profit off each set of 5 fake rides, and could keep on earning more than a day's worth of salary⁶⁴ just through this method, given the Gojek algorithm offers another 50,000 bonus when a total 10 rides are completed and so on. This particular loophole is indeed quite infamous, as Gojek has tried to address it over the years in various ways⁶⁵, but mostly in vain. During my fieldwork, I have come across drivers who claim that the platform is pushing a nationalistic rhetoric to curry them into not defrauding the 'pride of Indonesia' — a rhetoric most drivers are generally fond of⁶⁶, yet do not subscribe to the extent of diverting them away from the thrill and immediate financial benefits of pursuing the 'hoax GPS' trick. Indeed, the end of operations in Indonesia for Uber during 2017 was seen by many drivers as a

64 Most of my informant drivers' estimates of their daily revenue converge around 200-250k rupiah per day (rwith around 20-30k cost). They average 5-6 million rupiah per month — roughly 30% more than the national average (4 million rupiah).

65 Busters, GO-JEK Fraud. "Making GO-JEK App Fairer & Safer, for Everyone." Medium. Medium, March 19, 2018. <https://medium.com/@fraudbusters/making-go-jek-app-fairer-safer-for-everyone-893a4d1ad3d4>.

66 (2019). Gojek: Delivery workers struggle in Indonesia. Retrieved October 22, 2020, from <https://libcom.org/blog/gojek-delivery-workers-struggle-indonesia-28062019>

victory. Following that event, they concentrated their protests against the Singaporean company Grab. Grab represented, to some at least, the capitalist encroachment from abroad into Indonesia and they needed to fight against it to force Gojek to respond their growing demands.

What is perhaps most notable regarding the hoax GPS phenomenon is that the conventional exploiter vs. exploited hierarchy is flipped on its head⁶⁷. Michel Foucault (1976) has often pointed at the characteristic of power to cut both ways, illustrating throughout his lectures and writings the ways in which people are not simply the inert target of a completely dominant focal point of power. Power is rather exercised through webs of interaction and societies are its dynamic relay vertices.

The notion of power is therefore conceptualized more as a relationship than a sheer force; a form of relationship that transpires between individuals, entities, systems and thus can very well be seized and deflected when the opportunities arise. The central authority in this particular game, the platform, is quite powerless in the face of its drivers' DIY software engineering and hardware reconfiguration capabilities and can only employ the coarse tool of banning them off their accounts if they are caught with this malware on their smartphone. Even in those cases, drivers have been widely observed to band together to

67 "...rather than entering a partnership, drivers are entering an exploitative relationship in which they are treated as sweated labour with little to no working protection". — Aulia Nastiti. "Drivers' Stories Reveal How Exploitation Occurs in Gojek, Grab and Uber." *The Conversation*, April 29, 2020. <https://theconversation.com/drivers-stories-reveal-how-exploitation-occurs-in-gojek-grab-and-uber-82689>

threaten the company with strikes, unless their fellow workers are accepted back⁶⁸. The results of these protests have been mixed, yet the practice of ‘hoax GPS’ is still widely prevalent across driver groups.

Considering such examples of transversal engagements across popular economies, it is evident that overall inequalities and focal points of power cannot be neatly categorized in dualistic oppositions, such as regulated markets versus unregulated ones, legal residencies versus slums, exploiter capitalists versus exploited workers, and so on. Rather, popular economies boast and perpetually engender multiple formations of power disparities (Caldeira, 2013). Seeking to expose such multidimensional power disparities is a critical task, as only by emphasising such moments of struggle that we can notice historical novelties.

When relations of domination and exploitation are altered, even in very specific contexts as the case study above, they rip through new potentials for political and economic decision-making across the societal fabric. Such organised manifestations of informality (or clandestine practices, as some may label them) expose the reality that financial transactions within the ‘base of the pyramid’⁶⁹ are not unacknowledged, unsanctioned or rudderless constellations of a weak populace that is simply readily available to compensate for economic

68 Nastiti, Aulia.. “Worker Unrest and Contentious Labor Practice of Ride-Hailing Services in Indonesia 1.”, Northwestern University, 2017.

69 For the particular podcast Makarim elaborates his inspiration journey to founding Gojek: Episode 11: How 3 Founders Met In Business School And Joined Forces. (2019, July 29). From <https://gofigure.gojek.com/episode/episode-11-how-3-founders-met-in-business-school-and-joined-forces>

crises. They are, rather, very well organised arrangements of social wealth (Simone, 2019).

During late 2019, the ex-CEO and founder of Gojek, Nadiem Makarim, noted in his podcast Go-Figure that he was highly influenced by the module “Businesses at the Base of the Pyramid” (also known as “B-BoP”), taught by senior lecturer Michael Chu at this MBA program in Harvard University — which was the tenure in which he conceived the idea of founding a company that would come to be Gojek. That particular course takes its name from a ‘buzzword’ popularized by the scholar C.K. Prahalad (2010), who have long argued that the most lucrative opportunities in emerging markets lay not in catering to the affluent but rather serving the billions of poor who aspire to join the market economy (i.e. become members of the formal sector). The term ‘informality’ is thus rendered an elusive one, as its incessantly shifting its exact address of existence and is unlikely to be a stable concept to be utilized in illustrating the realities on the ground.

This chronic instability is, in many ways, rooted in the skewed presence of the state, the precariousness of infrastructures and public services in urban areas all across the world, perhaps most vividly in the Global South (Caldeira, 2013). In such contexts, global sources of capital see growth opportunities where others may see broken systems, and consequently have been pouring significant amounts of liquidity into the cracks across socioeconomic infrastructure in Indonesia.

Large bestowments of capital substantiate entrepreneurial ventures such as Gojek⁷⁰, which, in its current form, can very well be conceptualized as a financial technology firm translating various webs of payments, lending⁷¹ and accumulation⁷² within the popular economies of Indonesia onto a digital realm. This shift is not simply a cash-to-digital upgrade of urban financial infrastructure but also a transposition that enables local popular economies to participate (in varying degrees of agency) in the creation and enlargement of novel circuits of global capital. This financial phenomenon ends up legitimizing ‘the informal’ as vital public infrastructure (Simone, 2019) and renders it a successful case of local ‘inovasi’. Such a legitimization process is most accurately positioned within the wider global framework of growing platformisation of urban circulations. The following sections describe the incentives and methodologies of the surging financial influx into popular economies.

70 The Jakarta Post. (2020, May 08). Gojek helps millions of local entrepreneurs digitize in fight for survival amid pandemic. <https://www.thejakartapost.com/adv-longform/2020/08/05/gojek-helps-millions-of-local-entrepreneurs-digitize-in-fight-for-survival-amid-pandemic.html>

71 “GoPay recorded a total transaction value of US\$ 6.3 billion during 2019...Head of Corporate Communications at GoPay, said the company was supported by hundreds of thousands of merchants who had worked together with GoPay: At present, there are more than 420,000 GoPay business partners in Indonesia” — GoPay recorded a total transaction value of US\$ 6.3 billion. (2020, January 28). <https://www.idnfinancials.com/news/31591/gopay-recorded-total-transaction>

72 GoPay launches in-app gold investment feature. (2020, June 10). Retrieved August 26, 2020, from <https://www.thejakartapost.com/cdn.ampproject.org/c/s/www.thejakartapost.com/amp/news/2020/06/10/gopay-launches-in-app-gold-investment-feature.html>.

b) Popular Economies as an Asset Class

Resembling any organism's quest for nourishment, capital tends to strive towards yield. Scores of investments are crafted to circulate capital in and out of global sources of sustenance. Since the 2008 Global Financial Crisis interest rates (the rent on parked capital in banks) has been trending towards zero⁷³. In search to find new springs of life, billions of dollars of investment continuously flow into urban financial infrastructures of the Global South, among other emerging asset classes which have the perceived potential to bear high returns. This phenomenon props up national GDP figures through enhanced financial inclusion (through formalization of transactions) and the balance sheets of a select group of local technology companies of the South (through an influx of large ticket equity purchases).

'Old school' brick and mortar investments — factory developments, plaza constructions et cetera that have long been the primary mode of entry into a foreign market — have become unfashionable with more innovative, liquid alternatives such as 'BRICS' (Brazil, Russia, India, China, South Africa) exchange traded funds (ETFs) and venture capital investments into large scale digital platforms. BRICS is a wrapper term to market the 'emerging economies' of the 2000s to a wide audience of wealthy investors in North America, Western

73 "If an interest rate is the cost of money, ZIRP means capital is now free." — Roy, R., & Duruk, C. (2020, March 06). ZIRP explains the world. Retrieved October 10, 2020, from <https://themargins.substack.com/p/zirp-explains-the-world>

Europe and Japan; denoting the capital letters of Brazil, Russia, India, China and South Africa. BRICS became a financial vernacular within the last couple decades, used often as a synonym for under-developed, high population countries that are ‘open for business’. Besides these five countries, Indonesia, Turkey, Vietnam, Mexico and South Korea are also often included in BRICS themed exchange traded funds. Exchange traded funds refer to basket holdings of global assets, typically investment portfolios which include various percentages of a given set of countries’ financial assets (large stocks, government bonds, real estate investment vehicles etc.).

Interactions between global, national and urban economies are thus becoming increasingly potent and ever-more entangled in tandem with the overall deregulation of capital flows across the world⁷⁴. Unprecedented amounts of liquidity is streamed into certain assets, allocated along a perceived risk curve — from treasury bonds to more volatile assets like real estate, equities, cryptocurrencies, precious metals and venture capital⁷⁵. Popular economies across many significant urban contexts are consequently becoming translated onto virtual realms that are built on the influx of venture funds from this ever-expanding base of financial liquidity⁷⁶.

74 Jeffrey Funk for the Straits Times. “Coming Bust in Venture Capital: S’pore May Be Worst Hit,” April 3, 2019. <https://www.sgsme.sg/news/startups/coming-bust-venture-capital-spore-may-be-worst-hit>.

75 “It’s Not a Venture Bubble (With Charts!)”, Reuters, Yao, L. 2020.-
https://www.whiskeypicnic.com/4-venture-pricing/?utm_source=Kauffman+Fellows+Journal,

76 "SoftBank could benefit as BOJ expands corporate debt buying", Reuters, Sano, 2020.
<https://www.reuters.com/article/health-coronavirus-boj-softbank/update-1-softbank-could-benefit-as-boj-expands-corporate-debt-buying-idUSL3N2CH158>

In such macro context, as the archetype of the digital representation of Indonesian popular economies, Gojek has rapidly become a speculative asset which placed itself within the crosshairs of global investors. A slice of equity in the platform is marketed as a bet on the future of a rejuvenated Indonesia and an emerging Southeast Asia. Gojek, since its mobile platform launch in 2015, has been an ardent recipient of venture capital and sovereign wealth funds from foreign entities such as Tencent (China), Google (United States) and Temasek (Singapore)⁷⁷. The promotional bonuses which Gojek depend onto grow its user base are subsidized by such streams within global financial cascades, all of which seem unlikely to dry up — as demonstrated by the \$2 billion injection in the midst of the COVID-19 crisis⁷⁸. Still unprofitable and largely dependent on foreign capital to keep its operations running, one can argue the platform will likely have zero interest in making profits as long as global interest rates remain at zero.

As long as Indonesia is perceived as a friendly base for high yield, its flag bearer Gojek can be hypothesized to keep on surfing the incoming waves of capital. Nevertheless, this is only an assumption made at a very volatile point in global markets and it is key to stress the fact that the balance sheet of the platform is as precarious as its labour base.

77 Russell, Jon. “Go-Jek makes first close of \$2 billion round at \$9.5 billion valuation”, TechCrunch, January 25, 2019. — <https://techcrunch.com/2019/01/24/go-jek-valuation-9-5-billion/>

78 “Facebook, PayPal invest in Indonesia's ride-hailing firm Gojek”, Choudhury, S. R. 2020 - <https://www.cnbc.com/2020/06/03/facebook-invests-in-indonesia-gojek.html>

Date	Funding Round	Value (\$million)	Notable Investors
March 2020	Series G	1200	Facebook, Google, PayPal, Tencent
July 2019	Series F	1500	Mitsubishi, Visa
February 2018	Series E	1500	Blackrock, Temasek, Meituan-Dianping
August 2016	Series D	550	Sequoia India, Rakuten Ventures
April 2016	Series C	170	Private/undisclosed
October 2015	Series B	26	Openspace Ventures Singapore
December 2014	Series A	2	Openspace Ventures Singapore

Diagram I: Capital Flow into Gojek⁷⁹

⁷⁹ “Gojek,” from Crunchbase, 2022. <https://www.crunchbase.com/organization/go-jek>.

Through its political legitimacy as a ‘local technology’ powerhouse and financial positionality as an emerging asset, Gojek has also reformatted of the nature of foreign direct investment (FDI) within the realm of road transport and infrastructure in Indonesia. Foreign investments into road transportation projects and companies have traditionally been highly regulated and highly restricted in Indonesia, as Law 22/2009 on ‘Traffic and Road Transport’ declares that solely the government is responsible for infrastructure development and its maintenance. Foreign capital can only own up to 49% of road transport related projects, albeit with severe (and often discouraging) restrictions on the type of businesses that are open to investment⁸⁰. Most forms of logistics services and taxi businesses, two of Gojek’s main operational units, are on-paper closed off to foreign ownership and investment.

Gojek, however, has bypassed such FDI equity limitations of foreign investment for road transport related businesses (Tham, 2018) by officially registering and communicating itself as an ‘mobile internet platform’ — implying little to no relation in regards to infrastructural development or ‘road transport’ as its core business. Bringing in more than \$5 billion USD of investments⁸¹ which have been primarily deployed to metropolitan Indonesia within the last 5 years (a

80 BPKM, “Daftar Negatif Investasi di Indonesia”, 2017. — <https://www5.investindonesia.go.id/id/artikel-investasi/detail/daftar-negatif-investasi-di-indonesia>,

81 “Gojek,” from Crunchbase, 2022. <https://www.crunchbase.com/organization/go-jek>.

figure that is comparable to Indonesia's yearly FDI inflows⁸²), the platform has been able to indirectly 'fund' the development and modernisation of Indonesian infrastructure through upgrading the country's urban logistics and mobility capabilities onto a digital realm.

c) Digitalization of Popular Economies

The digital platform economy is a prevalent business model in which long running urban circulations are repackaged as innovative business models, customary outfits are refashioned as branded gear and usual forms of financial transactions become vectors of growth potential. One such example besides Gojek, which illustrates this global trend is found in the reconfiguration of the Turkish grocery market.

In Turkey, grocery circulations traditionally run through 'bakkal'⁸³, small neighbourhood grocery shops that dot any urban zone since the Byzantine period⁸⁴. Currently there are more than 160,000 bakkal across the country, roughly one per 50 people (populace of an average street), considering over half the population live in cities in Turkey. The number is falling rapidly though, as

82 Reuters. "Indonesia's 2018 FDI seen falling to \$11 billion-\$13 billion: investment board". December 13, 2018 — <https://www.reuters.com/article/us-indonesia-economy/indonesias-2018-fdi-seen-falling-to-11-billion-13-billion-investment-board-idUSKBN1OC0DI>

83 'Bakkal sayısı 7 yılda 80 bin azaldı'. Retrieved August 28, 2020, from <https://www.hurriyet.com.tr/ekonomi/bakkal-sayisi-7-yilda-80-bin-azaldi-40869495>

84 "When Evliya Çelebi, the Islamic world's Marco Polo, chronicled Istanbul's daily life in the 1640s, he found 1,590 bakkal operating in the Ottoman capital" — Genç, Kaya. "Inside the Turkish Start-up That Wants to Be Your 'Personal Butler.'" Rest of World, August 11, 2020. [https://restofworld.org/2020/turkey-getir-grocery-delivery/?utm_source=Rest of World Newsletter](https://restofworld.org/2020/turkey-getir-grocery-delivery/?utm_source=Rest%20of%20World%20Newsletter).

there were more than 240,000 bakkal in Turkey in 2010). Typically a bakkal employs three workers: the master owner of the premises who is also the chief vendor ('usta', usually a 30+ male), a female supervisor of the financial ledger and storage of goods ('hanım', usually the wife or daughter), and an apprentice ('çırak', usually the son), who wanders the streets throughout the day and takes orders which he would deliver as soon as possible. This legacy business model is built on an intricate web of mutual IOUs and relies on a chain of perpetual trust within the neighborhood populace. Its rather unmarred decorum of existence despite various socioeconomic revolutions throughout the centuries is rooted in two key forms of convenience: first, physical proximity, as a bakkal that a family depends on is never further than few blocks away; and second, instant credit, as transactions are often not completed on the spot, given all bakkals keep a debt ledger called a 'veresiye' book which is indeed a form of financial technology that allows customers to shop on credit.

The bakkal model is up for another test of the times, as its latest direct competitor since the proliferation of supermarkets, is the globally funded⁸⁵, ambitious Turkish delivery startup Getir⁸⁶. Each day in the largest urban zones in Turkey, purple-g geared Getir deliverymen carry more than 75,000 packages, containing everything from diapers to iPhone chargers. Just as the çırak (apprentice) would receive an order and log in the transaction into a bakkal's

85 Daily Sabah. "Turkish Startup Attracts \$38M from Silicon Valley Investors." Daily Sabah. Daily Sabah, January 15, 2020. <https://www.dailysabah.com/technology/2020/01/15/turkish-startup-attracts-38m-from-silicon-valley-investors>.

86 'Bring' in Turkish.

veresiye (ledger) and then deliver as soon as possible, the Getir algorithm receives virtual orders around the clock and diverts them to the nearest storage of the company. The customer can buy discounted subscriptions for further deliveries as well, resembling the credit system of the legacy model. Taking on the centuries old model was, at least as told by the founder of Getir⁸⁷, was a conscious objective. Since the application's launch in 2015, the aim was to ensure, through various forms of algorithmic refinements and logistical planning, that orders would arrive in less time than it takes for a local delivery boy to show up with an order — give or take 15 minutes⁸⁸. Similar to the way Gojek centralised the traditionally dispersed nodes⁸⁹ of pangkalan ojek⁹⁰, Getir effectively centralised⁹¹ the bakkal model and refashioned it as an instant delivery logistics model. Indeed, Gojek has not only translated the Indonesian ojek craft onto a virtual realm to increase each node's (driver base) reach; it has also integrated street food stalls into its wide sales radius, exponentially

87 “The idea “was developed in 5 seconds,” he later claimed. He pitched the idea to Arkady Volozh, the CEO of Yandex, “in 7 seconds.” The Russian billionaire’s response was reportedly even briefer: “I like it”. Once Volozh and other investors gathered \$9 million to back the new venture, Salur rolled up his sleeves to get to work.” — Genç, Kaya. “Inside the Turkish Start-up That Wants to Be Your ‘Personal Butler.’” Rest of World, August 11, 2020. [https://restofworld.org/2020/turkey-getir-grocery-delivery/?utm_source=Rest of World Newsletter](https://restofworld.org/2020/turkey-getir-grocery-delivery/?utm_source=Rest%20of%20World%20Newsletter).

88 Genç, Kaya. “Inside the Turkish Start-up That Wants to Be Your ‘Personal Butler.’” Rest of World, August 11, 2020. [https://restofworld.org/2020/turkey-getir-grocery-delivery/?utm_source=Rest of World Newsletter](https://restofworld.org/2020/turkey-getir-grocery-delivery/?utm_source=Rest%20of%20World%20Newsletter).

89 See Appendix G for Gojek deliverymen taking orders from street food stall in Java, taken during my fieldwork in Jogjakarta during early 2020.

90 Motorcycle taxi bases in Bahasa Indonesia, a common signage in urban Indonesia to this day.

91 Getir holds its own inventory, has its own cars (although the workers have gig contracts), and rents its own warehouses in prime locations of large cities across Turkey to ensure immediate deliveries.

increasing their traditional operational zone of a few hundred meters (average eye-sight of a passer-by) to an entire urban zone. Such processes of digital platformisation coupled with a widely recognizable brand⁹² has shifted the focal point of trust in everyday financial transactions from neighbourly interpersonal relationships to anonymous reviews within smartphone screens and impersonal conversations with customer service centres.

GoPay is the primary payment method for a ride or delivery from Gojek's more than 2 million drivers and 900,000 merchants as of 2021. GoPay positions itself as a financial services platform in Indonesia for people who are not or underserved by the formal banking system. Gojek drivers and passengers can GoPay to manage their insurance policies and loans through the application's GoSure⁹³ and PayLater⁹⁴ functionalities. The incentive for participating insurance companies have been the ability to use sales data collected by the application in their insurance and loan issuances. Gojek's GoStore product also allows small businesses to create online shops and integrates with Facebook and Instagram. In 2020, the platform paid around \$159 million for a 22% stake in

92 Getir is still unprofitable due to its massive marketing budgets and prioritization of scaling with venture capital, over profitability.

93 Jung, James. "Indonesia's Gojek, PasarPolis Launch Online Insurance Service GoSure." AsiaTechDaily, February 4, 2020. <https://www.asiatechdaily.com/indonesias-gojek-pasarpolis-launch-online-insurance-service-gosure/>.

94 Tobin, Meaghan, and Wulan Kusuma Wardhani. "How 'Buy Now, Pay Later' Services Are Driving Southeast Asia's Super-App Battle." Rest of World, June 14, 2021. <https://restofworld.org/2021/credit-where-its-due/>.

Bank Jago, a local lender, allowing GoPay users to open traditional bank accounts through the app⁹⁵.

The variety of digital translations of popular economies of the Global South are not necessarily depicted to push through the idea that only decentralised forms of urban infrastructure are authentic innovations and that other centralised models are not really innovations. Neither does this approach aim to simply supplement the contemporary ‘high-tech/high-cap’ business models with their modest and humble roots from unrecognised spaces and popular threads of urban life. These examples rather, aim to depict how these legacy infrastructures act as counter-proposals to the dominant idea local innovation can only be engendered through centralised, top-down policy making and state of the art engineering (as the word ‘inovasi’ in Bahasa Indonesia tends to refer to).

The most practical forms of urban infrastructure, in this case the bakkal or the ojek, have no known founders, no particular central decision-making mechanism and no 5-year plans to improve upon their inefficiencies. Nevertheless, they have long acted as key technological layers in which vast amounts of financial transactions run upon in urban zones. These are technologies of the people, addressing immediate urgencies, not fantasies of excellence in industrial or software development. To take this point further, if considered as socioeconomic assemblages, popular innovations allow us to

95 Tobin, Meaghan, and Wulan Kusuma Wardhani. “Gojek and Tokopedia’s \$18 Billion Merger Sets the Stage for Regional Fintech Showdown.” *Rest of World*, May 28, 2021. <https://restofworld.org/2021/a-battle-royale-in-asian-fintech/>.

glimpse into the capabilities, needs and solutions of the public itself. This is a technological public, a collective realm different from an imagined nation or a globalized market. To merely glimpse into this collective knowledge base is inherently valuable, as descriptions of it still lack a proper vocabulary and concepts are often borrowed from relevant yet tangential disciplines. Thus, the notion of a technological public may offer a novel starting point for science and technology studies, as an experimental space to seek how popular economies engender, perpetuate and reconfigure everyday technologies and urban infrastructure.

The next chapter expands on the vital role of labour in the assemblage that is Gojek. Aiming to shed light on the complex nature of employment in Indonesia, allowing discussions to scrutinize why certain forms of work are deemed as 'formal', 'skilled', 'informal' and 'unskilled'. The chapter demonstrates the largely overlooked abilities of pengojek to navigate a rather precarious job market and everyday traffic jams, with various fieldwork notes from the Riau, Java, Sulawesi and Bali islands. Billions of dollars-worth of financial transactions are enabled, in no trivial part, by the daily toil of millions pengojek in urban contexts of Indonesia, rendering their collective presence an imperative phenomenon.

Chapter 3: I. Labour as Urban Infrastructure

a) Introduction

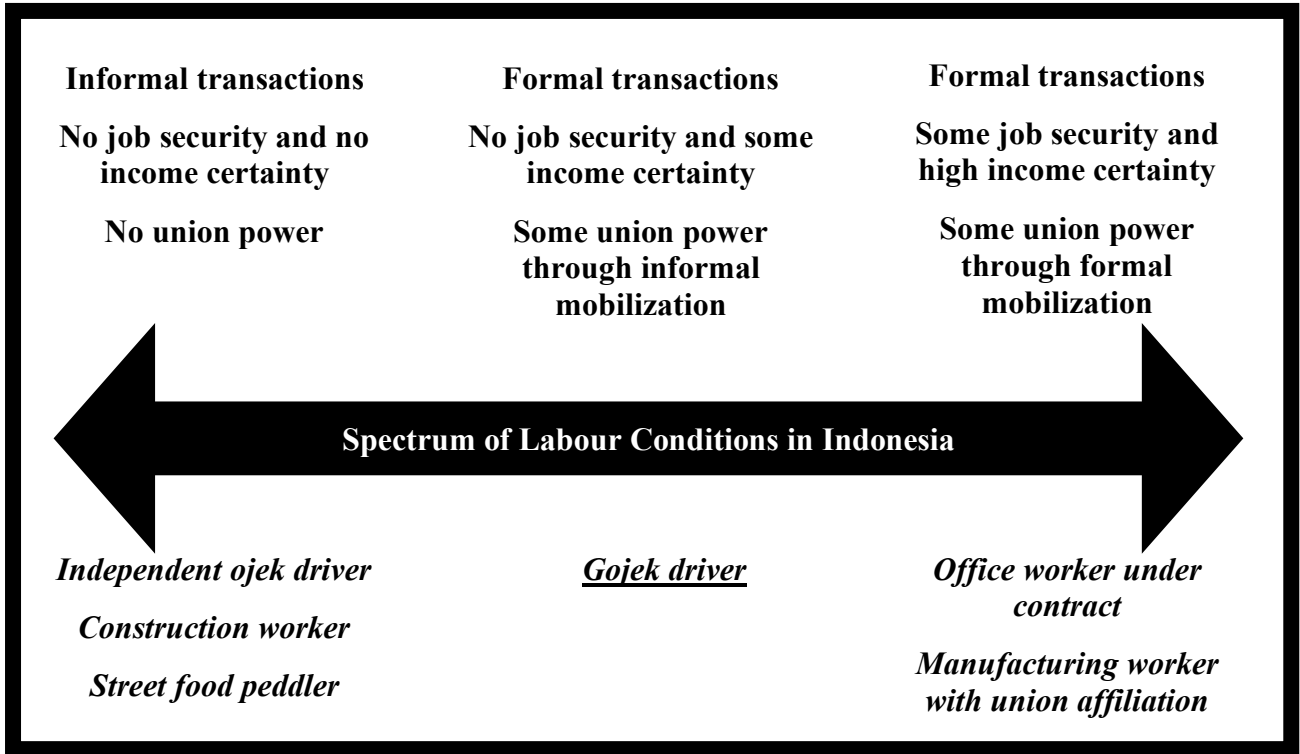
Gojek is the largest digital platform company in Indonesia with its drivers constituting almost 2% of the workforce⁹⁶. Digital platforms such as Gojek connect people and execute transactions within an abstract realm, as they also reformat the everyday use of tangible material such as motorcycles, smartphones and helmets by allowing the maximum utilization of potential economic value of otherwise idle objects through novel forms of labour. By delivering food, packages and passengers according to GPS commands based on granular data drawn from silicon chips embedded in their helmets, jackets and smartphones, Indonesian urban populace now exchange their sweat and toil for algorithmically set commissions on Gojek's centralised digital platform. This is a fundamental shift in the intrinsic value of labour and everyday tools, as the presence of the platform enables the monetization of the routine usage of motorcycles, helmets and smartphones (Parker, 2016).

In parallel with this fundamental shift arising in the nexus of 'the tangible and the intangible' Gojek's emergence also sheds light on the complex nature of employment in Indonesia, allowing discussions to scrutinize why certain forms

96 "My Kids Need Me, but We Need Money Too": Female GOJEK Drivers in Indonesia," October 25, 2020. <https://melbourneasiareview.edu.au/my-kids-need-me-but-we-need-money-too-female-gojek-drivers-in-indonesia/>.

of work are deemed as ‘formal’, ‘skilled’, ‘informal’ and ‘unskilled’. Gojek’s ubiquitous digital platform is a centralising, formalizing and disciplining force within a relatively decentralised and enduringly precarious labour market. Equally important, the rather profound commercial intervention of the platform into the Indonesian street economy enables various degrees of freedom (Sen, 1999), legitimacy (Lee, 2018) and emancipation for its drivers (Ford and Honan, 2017). Best conceived across a spectrum than in absolute terms, this chapter aims to illustrate how the terms ‘informal’ and ‘formal’ are not necessarily opposite versions of a single phenomenon but complementary forms of realities lived and imagined within the larger universe of popular economies. Ergo, the spectrum below classifies the key criteria in which the ‘Gojek effect’ (Ford and Honan, 2017) is experienced by the Indonesian labour force and how the platform’s presence reorganize long-established features of popular economies:

b) Spectrum II: Labour Conditions in Indonesia



The spectrum above lays out a relativist illustration of various degrees of labour conditions of contemporary Indonesia. Popular economies (Simone, 2014), as defined extensively in the previous chapter, refer to a large and vivid universe of activity among the left of the spectrum. The mesh of informal and formal transactions, ad hoc solutions to practical problems, sparse income certainty and little to no effective opportunity of mobilization against precarious working conditions all together come to define the overall labour conditions for the majority of workers in Indonesia. Only those who lay at the right of the spectrum a palpable level of job security and have some level of collective representation against clearly defined employers and relevant government agencies.

The dominant narrative in digital platform labour literature is that platform workers are completely disenfranchised as they are classified as contractors while facing increasing algorithmic control of their work, leaving them with the worst possible outcome (Dubal, 2017; Rosenblat, 2018; Franco and Ferraz, 2019; Choudary, 2020). Such contemporary labour scholars point out many valid reasons to worry about in regard to labour conditions within digital platforms, most notably the perpetuation of low-paying insecure jobs by a new generation of corporations. Yet a closer investigation of platforms' everyday presence on the ground and the overall benefits and costs of having such digital infrastructure in an urban context warrants a more complex evaluation (Glöss et al., 2016; Ford and Honan, 2019). A framework built upon the aforementioned range of conditions allow a more nuanced approach, as Gojek's

intervention into the labour market of Indonesia bridges these two ends of the spectrum, creating a hybrid alternative.

Focusing on the lived realities, routine mobilities and certain forms of belonging as vantage points for defining areas in scholarship tend to lead to the construction of convenient, and often ineffectual lumps of geographies. This dissertation in general moves out of the rather stiff boundaries of area studies (e.g. Asian Studies, Japanese Studies, Southeast Asian Studies etc.) as such frameworks assume a clear physical boundary to formulate arguments within. Global geographies, especially bearing in mind the impact of mobile technology, are increasingly not accurately defined by borders between territorial or maritime spaces, but by the reach of platforms and thus virtual forms of belongings, regardless of where exactly in the world people are physically located (Derichs, 2020).

This is though not to say Area Studies scholars operate only within stiff boundaries, especially in intellectual grounds. Indeed, they are also much more able to assert more universal claims because they do not tend to depend on the alibi of disciplinary norms and boundaries (Abraham, 2020). It is important to note that Southeast Asia has rather long been the source of universal anthropological theory, as it has often inspired seminal pieces of intellectual labour (Geertz, 2000; Simone, 2004). It is important to ponder though, why we do not refer to any 'Northwest European Studies' or 'North American Studies'. Perhaps it is an apt occasion to take realities in the South as the default starting point in assessing novel everyday technologies.

Bearing such positionalities in mind, this chapter describes a digital platform based work in Indonesia as a novel and practical solution which does not necessarily provide all the advantages of having a formal labour contract, but as one which does alleviate key pain points many workers within popular economies face in their everyday experience, especially in the domains of safety, certainty and mobilization. This introductory section goes through these particular concepts, illustrating how such everyday concepts made the platform relevant as a form of urban infrastructure in Indonesia and in turn, Gojek's enduring impacts upon each particular notion.

c) Safety

Metropolitan Southeast Asia offers numerous vivid plots to probe into how popular economies of the Global South interact with digital technologies. Inserting itself in certain micro-frictions of everyday life of Indonesia, the Gojek platform thrives as a platform business in a vibrant environment that resemble an urban jungle. Its key business model and positioning is built around ensuring relatively more safe, comfortable and identifiable first and last mile solutions for daily commutes, in contrast to traditional taxis or ojek. Providing a clear branding and visibility through helmets and gear, license plate registration for their drivers and the capability of real time ride-tracking through GPS

technology, the platform addresses the major pain point of ‘safety’ within urban mobility options⁹⁷.

Every ojek driver has his own attitude and ‘mental map’ while driving: patient or jerky, to obey or to violate traffic lights, to follow the conventional route or not and so on. In response to all such safety concerns, Gojek’s formal training sessions aim to enhance driving and customer service skills of its driver partners. The corporation’s power in reformulating trust based relationships can be observed as a form of biopolitical potency, disciplining and regulating a mass of workers with the objective of ‘modernisation’ and efficiency. Through creating a safer option, both in terms of trust issues in regard to the driver’s background and the actual ride experience, the platform formalizes the operations of ojek driving within their markets. Such phenomena demonstrate how it replicates the role of a government in regulating urban contexts by

97 "Lagos State Commissioner for Transport Dr. Frederic Oladeinde acknowledged to Rest of World that, although the government had met with the startups impacted by the [motorcycle] ban, it was nonetheless enforced as a safety measure...“We don’t put business above lives,” he said. The [Nigerian] government has often pointed at motorcycles as a leading cause of accidents. Last year, a top official claimed that, between 2011 and early 2019, more than 11,000 people had been killed in motorcycle-related accidents. The National Bureau of Statistics data shows 317 people were killed in all Lagos crashes, a figure that is inclusive of motorcycle-related accidents, between 2017 and 2019. When asked about Gojek and Grab’s success in Asian markets, the commissioner insisted on the importance of recognizing the kinds of transportation that different geographies demand. “It’s not about copying what is happening in other cities,” he said. Unless, perhaps, the city in question is London. “I get frustrated when people say, Oh, they use two-wheelers in Asia,” he said. “So why are they not using two-wheelers in London? Because London is smaller and will not promote two-wheelers. London has gone for mass transit; they have gone for the bus system that would move people safely from one point to the other.” — Parmar, T. (2021, January 04). How a Lagos motorcycle rideshare boom went bust. Retrieved January 04, 2021, from <https://restofworld.org/2021/nigerias-war-on-wheels/>.

becoming the provider of safety and stability measures (through exerting biopolitical⁹⁸ power that would rather be characteristic of a state).

As suggested in the introduction of the chapter, mobile platforms such as Gojek do not merely connect people and virtual nodes within a multidimensional prism of hardware and software, but also fundamentally reformat the connotations of common objects. Gojek branded helmets⁹⁹ are a specific example of subtly reformatted everyday tools to incite notions of safety towards the platform's 170 million strong user base¹⁰⁰. The platform's motorist jackets similarly, boast the Indonesian flag¹⁰¹ that resemble national troops' outfits — playing into the notion of familiarity. The phenomenon of reformatting offline tools to fit an online realm tends to be naturally revealing of Gojek's general positioning within an array of online-to-offline companies in the streets of Indonesia such as the Singaporean Grab or the (once-present) American Uber (Uber was acquired by Grab during 2017 after a years-long price war to the bottom, rendering both companies in dire need of consolidation to cut their losses. Grab has nevertheless still not been profitable).

Gojek is loud and clear with their nationalist tone in all their visual presence across the Indonesian archipelago. Regarding the jacket visuality in particular,

98 "...to ensure, sustain, and multiply life, to put life in order." — Foucault, Michel. "History of Sexuality" Part Five. Volume 1. Éditions Gallimard. 1984.

99 Appendix H.

100 Singh, M. (2020, November 17). Indonesian telecom network Telkomsel invests \$150 million in Gojek. Retrieved December 15, 2020, from <https://techcrunch.com/2020/11/16/indonesian-telecom-network-telkomsel-invests-150-million-in-gojek/>

101 Appendix I.

it can be observed Gojek chose the national colors of each market it operates: Halal/Islamic colors of green and black in Indonesia, red in the communist nation of Vietnam (where their operations were expanded as Go-Viet during 2018) and the royal yellow in Thailand (where their mobile application is named GET! during 2019)¹⁰². It is notable that Gojek later on streamlined all its branding across Southeast Asia under its original own hue of green during 2020, as they noticed their color-play to be deemed a local company when facing regulators did not serve any particular benefit — as it did in its own home court of Indonesia. Gojek’s formal entity in Indonesia is named “PT Dompot Karya Anak Bangsa”, translating to “A wallet made by the nation's children” — an emotional and rather hyper-nationalistic way of positioning themselves vis-a-vis any regulatory troubles, making it potentially sound as if a regulator is attacking the future of a nation by dabbling with banning or restricting Gojek’s operations in Indonesia.

The platform drivers’ gear also serve a basic purpose of physical safety for both the drivers and passengers. Most independent ojek drivers can be observed not wearing any form of protection while driving while the platform makes it mandatory for their drivers to keep helmets at all times. This is ensured by not only allowing passengers to report issues of not being presented helmets for the ride, but by also disabling the driver to utilize the GPS on his Gojek app while

102 “Gojek to unify brand across four nations as Grab war rekindles”. Retrieved December 15, 2020, from <https://asia.nikkei.com/Business/Startups/Gojek-to-unify-brand-across-four-nations-as-Grab-war-rekindles>

the helmet is not worn, as the map interface locates the driver's exact position through a silicon chip embedded in his own helmet¹⁰³. The thick green and black jacket is also a form of protective gear in a rather life-threatening craft, as much as it can be a searing experience for the driver to wear it in the tropical climate of Indonesia, it serves as a vital protective tool. Motorcycles are the primary type of vehicles involved in traffic accidents in Indonesia as it is estimated that 28,000 fatalities happen yearly due to accidents with a fatality rate of 12 per 100,000 accidents¹⁰⁴.

Gojek's centralised disciplining force within the motorized flows of urban Indonesia is hence continuously exhibited through its 'uniform' presence. It is important to note that the helmets which Gojek provides are not only beneficial to the average ojek driver for their mere provision but also relative quality. In urban Vietnam for example, another Southeast Asian context comparable to Indonesia, most road fatalities happen not due to the lack of helmets but rather the low quality second hand usage of weaker helmets: "...with the 2007 helmet law in place, the demand for helmets increased dramatically. This demand drove the burgeoning market for cheap, unstandardized helmets which are readily accessible from roadside businesses. But despite this successful push to get people wearing helmets en masse, riding a motorbike remains unsafe in

103 Appendix J for inner details of Gojek helmet.

104 "This [rate] is very high compared to neighboring countries like Singapore (4.8) and Australia (5.2), while most researchers assume that fatality numbers are still under-reported." — Jusuf, Annisa, Ignatius Nurprasetio, and Arya Prihutama. "Macro Data Analysis of Traffic Accidents in Indonesia." *J. Eng. Technol. Sci.* 49, no. 1, 2017.

Vietnam due to the prevalence of insufficient cap helmets and counterfeit helmets”¹⁰⁵.

Throughout my fieldwork, I have also observed street food workers in Jakarta¹⁰⁶, who were not working for the platform, commonly observed to be wearing Gojek jackets as a rather eccentric symbol of status and affiliation. It is not uncommon to observe many young Indonesians tinkering with the Gojek helmet design as well, creating some of their own styles and selling them through Whatsapp, Instagram or on local e-commerce platforms¹⁰⁷. Close analysis of hardware, visuality, everyday rhetoric and usage of gear therefore, exposes how these often overlooked tools are inseparable and revealing components of online platforms’ ability to create imagined communities (Reid and Anderson, 1985). This notional shift is essentially what makes an ojek a Gojek as it manifests an emerging urban subculture in Indonesia.

Resembling an urban subculture, the platform is contemporarily beyond a ride-hailing and delivery platform, as it rapidly became an unescapable facet of Indonesian urban texture: During one of my interviews in Bali, a friend of the pengojek (Wayan) I had been traveling around with asked him “...why don’t

105 Govi Snell, Ashley Lampard, Horn Chanvoitey, and Toh Ee Ming. “What’s the Danger with Vietnam’s Motorcycle Helmets?,” December 24, 2020. <https://southeastasiaglobe.com/vietnam-motorbike-safety>

106 “The Greater Jakarta area has about 35,000 informal eateries. Across Indonesia, there are perhaps three million” - Freischlad, Nadine. “Wahyoo’s Recipe to Spice up Indonesia’s Traditional Food Stalls,” August 17, 2020. <https://the-ken.com/sea/story/wahyoo-indonesia-warteg-food-stalls/>.

107 Appendix K, a Gojek helmet bought from a local e-commerce site in Indonesia — not officially made or endorsed by the company itself, such ‘artisanship’ is not uncommon across the country.

you learn English through Google Wayan? How did Gojek recruit someone like you?” — in a sense implying the quasi-status symbol of Gojek. That is indeed a perception I noticed since the beginning of my fieldwork two years ago, working for Grab or Gojek in Indonesia as a driver is a rather prestigious, or at least perceptually decent profession; way more than becoming a Grab driver in Singapore, where such a switch is seen as a massive step down in one’s professional career. In the case of this pengojek, “...it was a relief”, given he used to work 12 hours on the night shift at a Pertamina gas station in Denpasar. He now works up to 8 to 10 hours during the days he chooses to, allowing him flexible scheduling for his ceremonial duties (a flexibility that is not trivial for a Balinese).

The tangible components and overall visuality that make up an average Gojek ride demonstrate how the platform economy is manifested on the street. Gojek unites “disparate technological forces into a power greater than the sum of its parts” (Rothstein, 2015) as it assembles a technological exhibition that echoes AbdouMaliq Simone’s (2013) mantra “...one thing is not one thing, in the everyday life of metropolitan Indonesia”¹⁰⁸. The common practice of reassembling seemingly mundane tools and gear to allow the maximisation of the economic value they can create beyond their sole personal usage within popular economies — in other words, tinkering by the nameless innovator

108 “Urban Age Shaping Cities: AbdouMaliq Simone - Feral urbanism”. Published on Jul 21, 2016 by UrbanAge. —<https://www.youtube.com/watch?v=--aMk1XEy7s>

within the public — is translated into digital form and branded with a corporate trademark. Appealing to the consumer-based values of an emerging Indonesian middle class and ‘correcting’ the unruliness of the otherwise chaotic city¹⁰⁹, Gojek attracts the precarious class to join its own ranks with its technologized charisma (Lee, 2018) while persuading the everyday Indonesian to take a ride with them.

As Gojek summoned the majority of its worker pool from independent ojek drivers, it outfitted the nondescript ‘man on the street’ with a celebrated corporate identity and gave it a vivid new look of technological allure (Lee, 2018). The business model of ojek has been traversing the streets of Indonesia since decades without any fanfare — yet it took such visual and notional increments for it to be celebrated and ‘de-risked’ within the collective imagination of the urban populace. As much as such a phenomenon can very well be read as a case of ‘tech-washing’, the platform does offer its users more affordable (independent ojek tend to cost 5 to 10 times more than an average

109 “What have people said about the [motorcycle] ban [in Lagos]? The decision has not gone down well with commuters, who feel the decision is elitist and targeted at the poor. As many sweaty commuters waited at the bus stations for unavailable taxis and buses on Monday, they wondered why the government did not provide alternatives before placing the ban. The government said it had provided more public buses and boats for those along the waterways, but the truth is that the kekes and okadas provided a badly needed service. They plied the streets and hard-to-reach areas where buses and taxis are unable to go. In this city where appearance means a lot to many people, the okadas saved them from the dust and the sweat of walking, by dropping them off at their doorsteps. The people who will approve of the ban are private car owners who had a difficult relationship with the two- and three-wheelers. Anyone who has driven in Lagos, or in any of the Nigerian cities where okadas and kekes operate, will know how frustrating it is to share the same road with them” — Orjinmo, Nduka. “Lagos Motorbike Taxi Ban: Chaos as Nigerian City Removes Okadas,” February 3, 2020. <https://www.bbc.com/news/world-africa-51353665>

Gojek ride) and fixed-rate rides (letting users avoid the routine nuisance of price-haggling) and harnesses the desirable aspects of motorbike based mobility with the convenience of cashless and traceable digital transactions.

It is important to note the phenomenon of removing the price haggling from the ride-hailing equation, inevitably removes a key bargaining power of the worker, as his or her ‘cost per hour’ is now determined by a central algorithm and not him or herself on the spot (Indonesian taxi drivers can be very convincing in agreeing their customers to a lucrative price — especially first-time foreigners). This lack of agency in setting price was a major reason quoted by numerous independent ojek drivers that I have interviewed through my fieldwork as to why they did not switch onto the platform to continue their craft (besides some not being able to due to not having adequate documentation). Another major reason of independent ojek drivers not joining Gojek is not being able to provide adequate personal documentation such as drivers licenses et cetera. For such drivers, who tend to work in touristic regions such as the Riau Islands and Bali, persuading a single foreigner to take up a ride with them every second day or so is sufficient enough to not jump onto the Gojek platform. As a note from the fieldwork that was conducted for this dissertation, I visited the local Gojek and Grab offices in Denpasar during October 2019. I tried to get my hands on some documentation, but was advised to instead ‘sign up online’ — they do not sign drivers up through paper forms at the offices anyway — all the forms are online and the application involves the submission of many personal documents such as driving license, insurance details and SIM card information.

During one of my discussions in Surabaya during early 2020 with a pengojek, he mentioned a practical reason beyond comparing pay per hour in explaining why he chose to join Gojek instead of being an independent ojek. Being Gojek driver (ojol) enables one to have less or no problems with the police, as being konvensional opang/ojek¹¹⁰ is more vulnerable to having to pay bribes to keep operating. To note, ojol is the colloquial term for “ojek online”. Grab and Gojek are often not referred to as ‘apps’ or ‘platforms’ or even by their name in Bahasa. Rather, they tend to be only as called ‘online/offline transport’ and ‘ojol’. On many occasions pengojek I have interviewed told me: “I mix online & offline” referring to how they do both daily tours for tourists and take up jobs from Gojek. They also refer to ‘offline’ rides as ‘conventional rides’. On many occasions they use the Gojek rides to pitch their tours to foreigners.

Communities ‘streamline’ the relationships with the local officials, allowing drivers to concentrate on their operational schedule instead of dealing with the daily whims of the authorities. While in that vein of discussion, I asked the pengojek, as we he hosted me at a pangkalan in central Surabaya, how significant being part of a Gojek community is in terms of keeping their daily craft safe and after a hesitance of few seconds, he claimed without such communities “kami masih bisa jalan (we can still walk and continue)” — but “life would be difficult”.

110 Colloquial for “independent ojek”.

Many recent publications (Jurriens and Tapsell, 2017) claim as much as Indonesia is going a ‘digital revolution’, the revolution’s reach is weak in rural areas. My observations throughout my fieldwork that span a timeframe of more than two years and a geographic range of five major islands in Indonesia however made me rethink the common trope of a rural/urban digital divide in Indonesia. Most of the public’s familiarity with (or perhaps borderline addiction to) social media in both rural and urban areas is noteworthy. I would contend there are way larger gaps and demographic divides in access to stable electricity (Mohsin, 2017), clean water and education than a clear ‘digital divide’ (electricity is way tougher to provide than data coverage, it requires much more hardware and cables, whereas a cellphone data can be provided through decentralised nodes of towers that are rather easy and cheap to set and have a wide radius).

As another facet of the notion of safety, a fundamental benefit Gojek offers its drivers is a basic work-related insurance¹¹¹. Most of the platform’s drivers tend to be former ojek drivers, which likely had no protection in face of accidents during their time as an independent driver. By providing such a basic benefit, Gojek does to ameliorate their lack of health coverage in common occasions such as accidents or robberies (this insurance certainly should not be confused with a comprehensive life-insurance or pension coverage. It is only meant to

111 Sumirat, Cahya. “Gojek dan BPJS Ketenagakerjaan Beri Kemudahan Akses Jaminan Sosial”. 15 April 2018. — <https://ekbis.sindonews.com/read/1298047/34/Gojek-dan-bpjs-ketenagakerjaan-beri-kemudahan-akses-jaminan-sosial-1523783029>

cover the driver and riders in the case of accidents during rides). Being covered by BPJS (Indonesian State Health Insurance Scheme) should not be passed off as a trivial matter though, as it came to be the difference between being able to receive a COVID-19 vaccine within a reasonable timeframe during the pandemic era¹¹².

Beyond physical, the notion of safety has wider implications in an economy where informal economy is the norm rather than the exception. Such a socioeconomic context is thoroughly explored in Sopranzetti's account of 'post-Fordist' Thailand which is a "...configuration dominated by flexible labour based on risk-taking entrepreneurialism, easier access to debt, and more precarious lives... itsaraphap played a meaningful framework for living through, talking about... this flexibilisation of labor, self-employment and its growing insecurity. It made precarity not only acceptable to drivers, but in fact desirable" (Sopranzetti, 2017).

Ride-hailing platforms in Indonesia provide a certain safety net for their workers, moving them closer to the 'formal' range of the spectrum in relative

112 "The government has also identified the priority groups for receiving the vaccine once it arrives in the country. The first priority group comprises 3.5 million frontline workers, including health workers, contact-tracing paramedics, and military and law enforcement personnel. The second priority group consists of religious and community leaders and local authorities at district, village, community and neighborhood units, who altogether comprise over 5 million individuals. The third priority group includes more than 4 million teachers at various levels of education. The fourth group is government officials and legislatures council members with more than 2 million individuals. The fifth group includes members of the Health Care and Social Security Agency (BPJS Kesehatan) whose fees are paid by the government. Their number exceeds 86 million individuals. The last group of more than 57 million is the general public." — "Indonesia Greenlights Adoption Of Major COVID-19 Vaccines". 2020. The Jakarta Post. <https://www.thejakartapost.com/news/2020/12/05/indonesia-greenlights-adoption-of-major-covid-19-vaccines.html>.

to their previous conditions (Racauskas, 2009). The safety ‘net’ in this context is therefore not a form of welfare-state provided social security net in its usual parlance, but rather the digital ‘net’ that the street economy labourers (ride-hailing drivers) depend upon for their sustenance. Rethinking the concept of ‘safety’ beyond its obvious everyday connotations (physical protection), street economy can thus be read as a societal ‘safety valve’ on a macroeconomic framework (Poerbo, 2010).

Popular economies absorb the bulk of unemployment in urban contexts during times of economic downturn (as delineated in the previous chapter, the Krismon era) due to its low entry barriers. In crises which warrant imperfect solutions, popular economies and digital infrastructures that thrive within such economies serve as de-facto fix to keep matters from getting worse for the average worker¹¹³. Gojek can be read as a form of digital safety ‘net’ — both an online network and a social security net simultaneously, and thus paradoxically

113 “Coronavirus has emptied its thousands of tiny stalls and quieted its hundreds of narrow passageways, which usually teem with tourists sweating in the soupy heat. Some locals still venture there for essentials, but the famed shopping complex, which normally sells everything from rattan place mats to street fashion, is largely deserted. Yet many mom and pop retailers, robbed of their market income, haven’t given up. Instead, they’ve turned to social media platforms such as Facebook and Instagram to hawk their wares. So many small vendors have embraced buying, selling, and haggling online that Thailand is now Southeast Asia’s largest market for so-called social commerce transactions, according to Line Corp., maker of the popular eponymous messaging app. Everything from home-baked brownies to lemongrass-scented cleaning products can be found on Thailand’s virtual shelves. Some fishermen are even selling their daily catch from the Andaman Sea. A similar trend is unfolding in Indonesia and the Philippines, where outdoor markets and street vendors are also common and traditional retail has been upended by Covid-19.” — Sayson, Ian. “Asia’s Vendors Turn to Facebook With Tourism Paused,” July 16, 2020. <https://www.bloomberg.com/news/articles/2020-07-16/asia-s-vendors-turn-to-facebook-with-tourism-paused>.

symptomatic of both a perpetual precarity and an enhanced emancipation of everyday working conditions.

d) Certainty

In comparison to street food peddlers, construction gig workers or independent ojek, motorcycle taxi drivers who are onboarded on the digital realm of Gojek have relatively more stable schedule of getting paid for their work. Gojek, albeit with an intricate algorithm that does favour certain drivers over others due to user feedback, provides a regular flow of ‘jobs’ to their drivers on a daily basis, allowing greater certainty of daily income as opposed to waiting out in the open at a pangkalan for a passer-by to come around and ask for a ride. This allows lessened financial uncertainty for the common worker (Ford and Honan, 2017), providing some extent of lower time preference and less levels of everyday anxiety¹¹⁴.

114 “Transport in Lagos has desperately needed a transformation for years, but motorcycle taxis known as okadas have been a fixture, since at least the early 1980s, for navigating the unending traffic. In 2017, bike-hailing startups entered the market, fusing tech with the already-established okada system. The vision for one such startup, called Gokada, was to replicate the success of similar ventures in Southeast Asia; Gojek and Grab...January 27th 2020, the government announced a ban on motorcycles and three-wheeled vehicles in major areas of the state, which went into effect five days later. The impact was swift: Commuters in the city waited for buses that never came, forcing many to resort to walking long distances in the absence of the bikes they had come to rely on. The ban was just as devastating for the startups themselves. Gokada laid off 80% of its staff, including riders and employees of the marketing and software teams, two days after the ban went into effect. ORide’s operations were suspended by OPay. Max let go of nearly 2,000 riders...Wasiu Olateju Saheed, a former Max driver, told Rest of World that the ban shows just how difficult the government can make life for its constituents. “They don’t think before they act sometimes,” he said. Saheed now works as an independent delivery provider and said making money daily was a guarantee as a bike-hailing driver, “but now, it’s not certain that you [will] make money” in the face of fluctuating demand for deliveries.” — Parmar, T. (2021, January 04). How a Lagos motorcycle

Gojek's centralised flow of orders harness the everyday needs and insecurities of a productive public (Pettica-Harris et al., 2018), as platform based drivers simultaneously alleviate and perpetuate their own precariousness by preferring to work for an algorithm instead of remaining independent in their schedules. By joining the platform, an increase in daily order flow is traded off for the ability of having full agency over their own pricing for these rides. Unlike Gojek drivers, independent ojek drivers ride without a taximeters, making bargaining for the fare rate an everyday nuisance for routine ojek passengers (Indraprahasta, 2016). Dealing with this friction by setting fares algorithmically, Gojek removes a subtle yet decisive issue in daily urban commute options.

An illustrative case of the dematerialization of the street economy is the integration of the platform with street food stalls. Gojek does not only translates the ojek craft onto the virtual space to increase each nodes (drivers) reach, but also centralizes and expands the reach of an average street food peddler, widening its potential sales radius. As such, the potential earnings of an average street food stall exponentially increases from a few hundred meters at best (average eye-sight of a passer-by) to an entire urban zone. This expansion of reach for the average street food peddler does not necessarily bring him or her to a non-precarious condition to become an entrepreneur in the F&B industry,

rideshare boom went bust. Retrieved January 04, 2021, from <https://restofworld.org/2021/nigerias-war-on-wheels/>.

but it does provide a more stable flow of income and hence greater overall certainty in his or her day-to-day operations.

Despite the key benefits of an expanded job flow which persuade users to onboard onto the platform, Gojek's presence within popular economies does not necessarily ensure a comprehensive level of certainty. In my conversations with pengojek in the Riau Islands, Bali, Sulawesi and Java, they have often mentioned that they had to complete a certain amount of deliveries and rides every day to be able to qualify for the 'bonuses' that the platforms offer — 'bonuses' which they relied on to make ends meet and keep riding for the platform. In a similar account, Alex Rosenblat (2018), through her extensive work on Uber elaborates how the company engineers its ride-hailing algorithm to keep a delicate balance of risk and reward for their drivers, creating incentive for them to be situated in 'profitable' areas of the city in certain times¹¹⁵. Drivers managed by algorithms can be categorized as performing 'under-the-algorithm' labour, having near-zero visibility in regard to the inner-workings of these complex command and control systems, as opposed to 'above-the-algorithm' workers (white-collar software engineers, product managers et cetera) who design the code (Choudary, 2020).

115 "Surge pricing, which multiplies prices for passengers and earnings for drivers during periods of high demand, is another form of algorithmic management that encourages drivers to relocate to certain areas at certain times. The drivers get in-app notifications, heat maps and emails with real-time and predictive information about spikes in demand. A driver who wants to go home and is trying to log out might be prompted with an automatic message: "Your next rider is going to be awesome! Stay online to meet him." — Rosenblat, Alex. "Uberland". University of California Press, 2018.

A primary form of frustration I noted from Gojek drivers during my interviews has often centered on this particular topic of obscurity around incentives¹¹⁶. Workers lack a solid understanding of the variables prioritised by the algorithm they work under, not being entirely sure why they are incentivised to deliver more food than passengers, work at certain hours and districts but not others. Food deliveries are more profitable for the company as they enjoy higher margins per ride by slightly increasing the restaurant prices within their platforms. Yet food delivery is rather undesirable for the drivers, as they only earn a small commission from the delivery (roughly half of what they would make from a ride hail at a same distance). It is also stressful and requires extra effort for a driver to go to a restaurant and make sure the orders he picks up are correct, communicate with the users about the procedure.

Platform companies continuously alter their algorithms in response to workers', users' and overall market behavior, rendering workers to find it rather difficult to appropriately adjust their daily routines in response to such changes. Thus, as much as the platforms do provide a level of certainty relative to most Gojek

116 “[A] function of [driver] communities [is the] provision of a forum for sharing information about the apps. Many of the drivers we interviewed talked about how difficult they found it to understand the rules of the apps, which frequently change. One Go-Jek driver explained his frustration: The company isn’t transparent. They don’t say how much the subsidy is or how it is to be cut (Interview, February 2016). In the base camps and their online forums, drivers discuss changes to the bonus system, how the tariffs are calculated, where and how they can withdraw their earnings, and how they can maintain a good rating. Some of the associations have also aimed to provide this service by organising forums where management from the companies are invited to explain policy changes to the drivers.” (Ford and Honan, 2019)

drivers' previous jobs and gigs, they do not empower them with full autonomy over their schedule as often advertised in their recruitment narratives.

As an anecdotal account of attraction to 'flexibility' and entrepreneurship, during one of my fieldwork interviews in Bali, a pengojek offered me to invest in his project to start a small rental tour company. He has been pondering this idea to start a 'rental company' by finding potential investors within his clients like myself. The deal would be for me to put down 200 million rupiah to buy him a car, then he would pay me 3 million rupiah per month for 5 years from his earnings from this car (that makes 180 million, so the extra earnings would come from reselling the car for an estimated amount of 100-150 million). I enjoyed his enterprising spirit as we discussed these, yet it seemed a bit too 'roughly calculated and planned' on his side to be an actual life goal and I felt it was more of a comforting thought and aspiration for him that one day he would own his own little fleet, operating with someone else's capital instead of taking all the financial risk of his labour on his own, as he does today. Many Gojek drivers often onboard the platform for the promised flexibility and stay because they have little options otherwise.

It is important to note that the majority of the drivers I spoke during my two year timeframe of fieldwork do not see themselves as 'entrepreneurs' or freelance businessmen. Being a businessman is more closely associated with money and power in their minds, even the suggestion of such a prospect seemed as an irrelevant status for them to aspire to.

In during my fieldwork Singapore as a comparison, I have encountered numerous drivers who were attracted to Grab, Uber and Gojek ‘to run their own business’ instead of working for someone else. It was a fundamental shift from their previous form of employment. In a context like Indonesia where working independently and informally is very common however, to drive for Gojek does not translate to a significant shift in self-identification. For most drivers, Gojek is simply the most viable alternative to make an honest living.

e) Mobilization

Gojek drivers’ unclear legal status does inevitably mean that they operate outside the parameters and potential benefits of a formal industrial relations system, yet this lack of formality does not stop them from organising in notable numbers and occasions. So much so that, the scale and frequency of online driver organising can be read in stark contrast to the consistent decrease in union membership density in formal sector occupations in Indonesia (Ford and Honan, 2019). The high levels of mobilization within drivers is indeed an unintended by-product of the way in which Gojek operates on the street level. Gojek’s public relations team and its recruiters employ various forms of symbolism and corporate rhetoric promoting unity and belonging both in territorial contexts (pangkalan¹¹⁷) and virtual contexts like the application interface and WhatsApp

117 Colloquial for “Gojek bases”

or Telegram group chats dedicated to driver recruitment and support. The company's positionality vis-a-vis its workers can be best described as a pseudo-employer (Ford and Honan, 2017), providing a certain focal point of belonging and a wider network for their drivers, in order to collaborate in cases of financial distress, work-related issues or personal problems¹¹⁸. Echoing Abidin Kusno's (2013) illustration of 'art of governance' in suburban Jakarta, a wider social network of friends and colleagues, often formed through Gojek themed WhatsApp and Telegram groups, enhances the fallback capabilities, and even income-pooling practices of many workers.

In one of my interviews in Jogjakarta during early 2020 I asked a pengojek if he likes the founder of Gojek (which he apparently works for during the usual week) and he made me a notable claim. He mentioned, as similar to a few other conversations that I already had regarding Gojek, that he was disappointed in the fact that "...Nadiem Makarim chose to hire Indian employees of Indonesians" and that he would rather make a better transportation minister than an education minister, as the company "...did little to improve the local talent in Indonesia". It was not the first time I heard this common belief among Indonesians, but this was one good opportunity to have a lengthy conversation about it, so I went onto explain every global corporation hires international talent and India simply has a wider and deeper stock of tech talent than

118 Normanda, Nosa. "Memori Ojek Pangkalan dan Monopoli Gojek" 14 June 2015. — <https://eseinosa.com/2015/06/14/memori-ojek-pangkalan-dan-monopoli-Gojek/>

Indonesia to hire on a large scale (as Gojek does in the thousands). I also went onto give both anecdotal and statistical examples in regards to how many Indonesians living in the US or Western Europe returned home (as they call it ‘balik tanah air’) to work at Gojek. He said he never heard of such phenomena, leading me to think Gojek is actually lagging in their domestic public relations in demonstrating the ‘nativeness’ of the company — an image they are very clearly enthusiastic about exhibiting in the global media due to its political advantages.

On the other hand, at the corporate front of the platform, I managed to get a rendezvous with Vicario Reinaldo, a Program Manager at the Organizational Development Department of Gojek from their Jakarta headquarters during February 2020. At one point of our discussion, I mentioned him the issue of hiring foreign talent in Gojek and the domestic perception regarding it. He then went onto explain how a wide contingent of Indian IT talent in Gojek emerged due to an urgent need in the nascent days of the Gojek mobile application. As a call centre that had a humble beginning and rather modest growth for five years, Gojek in 2015 was unprepared, both at its executive level and server capabilities, for the exponential growth it would suddenly experience in transaction volume. Projections for that year was “x” Vicario noted and apparently the transactions that kept pouring in (people calling rides) turned out to be “more than “20x”. As the young Gojek team started to firefight the issue, they discovered a large IT team in Bangalore, India who was experienced in handling massive transactions. They immediately brought them in, eventually

as full hires, who now make the bulk of the Gojek IT team. As I noted down this story, I mentioned Vicario that Gojek has been lacking in its ability to make such stories known in the general public and the domestic perception of the company and its founders is not as positive as they might think. He appreciated the insight but did not seem too concerned about it. It is observable that Gojek's public relations tends to be geared towards their investors and government officials, essentially not more than a handful of individuals. Curating a story through the mainstream media simply adds legitimacy and has little intention of trickling down to the general public.

As a result of becoming a focal point of work by becoming a pseudo-employer for a vast contingent of 2 million drivers, the platform is a primary target of shared demands and protests across urban contexts (Ford and Honan, 2017). In multiple occasions, Gojek drivers have organised strikes, sit-ins, colorful demonstrations and occasional acts of aggression towards numerous Gojek headquarters in metropolitan areas of Jakarta, Makassar, Medan and Denpasar. In one case, the situation was only defused with the mediation of President Jokowi in Jakarta¹¹⁹. Having a pseudo-employer renders Gojek drivers' campaigns' chances of success higher than trying to 'go-at-it-alone' as an independent ojek driver. The widespread platforms therefore, albeit

119 Arshad, Arlina. "Protests in Jakarta over app-based transport services such as Uber, GrabCar and Gojek". 22 March 2016— "<https://www.straitstimes.com/asia/se-asia/protests-in-jakarta-over-app-based-transport-services-such-as-uber-grabcar-and-Gojek>"

unintentionally and against their own interest, provide a certain degree of political freedom to their workers¹²⁰.

A key resentment that the drivers have is the anxiety of being de-platformed at any given time without adequate reasoning by their company. During many of my conversations with drivers, I came to learn that anytime a driver is reported by a user, the algorithm, more figuratively the faceless boss, fires him immediately, arbitrarily and without any confirmation if any faulty issue actually transpired. This is a precarious situation which does happen common enough to be cited in multiple interviews of my own and public announcements of protesting Gojek drivers¹²¹. In such a situation, the driver then has two options to be kept on the platform, he could try his luck in contacting and meeting with their local Gojek representative to be on-boarded again (which often involves a formal apology and a written agreement ‘not to behave badly again’) or in many cases, collectivize along with fellow fired drivers and protest against the company at their local office. Indeed the bulk of driver protests

120 “Through forums on WhatsApp, drivers had been discussing the car seizures and aspects of Ministerial Regulation No. 32/2016, which would have required them to have their vehicles inspected and to register their cars with a company, mimicking requirements in the conventional taxi sector. After a demonstration on 20 August 2016, the online car drivers were granted an audience with Commission 5, the national parliamentary commission responsible for transportation. It was members of this commission who suggested that drivers form an association to more effectively put forward their views. A total of 40 driver communities subsequently came together to form ADO, which registered as an association with the Ministry of Law and Human Rights in March 2017 and now has over 10,000 members (mostly car drivers) in 11 provinces.” (Ford and Honan, 2019)

121 CNNIndonesia. “Tanggapan Pihak Grab Indonesia Soal Demo Ojek Online,” January 5, 2017. <https://www.youtube.com/watch?v=S573ve6bM-I>.

across Indonesia tends to be caused by this particular issue, with mixed responses, depending on the local office and timing.

There has been more than 50 disparate protests by Gojek drivers between September 2015 and February 2017¹²² (Nastiti, 2017). In November 2015 for example, hundreds of drivers gathered outside the company headquarters in South Jakarta when payments for drivers were suddenly reduced from 4000 to 3000 rupiah per kilometre. The drivers coordinated a ‘no-bid strike’¹²³ in which drivers en masse refuse to take orders for a day¹²⁴ (Ford and Honan, 2019). On a separate occasion in July 2017 a large group of Gojek and Grab drivers demonstrated together, demanding their pseudo-employers to pay an incentive they had promised drivers at the end of Ramadan, abolish its mandatory code of ethics and not block drivers’ accounts notice due to a single complaint from a customer¹²⁵. Driver communities have different forms, purposes and strategies

122 “From August 2015 to date (April 2017), Go-jek drivers in 15 cities have engaged in various struggles and sustained resistances against the middleman firm. Their collective efforts include creating informal unions, organizing protests and strikes, and seeking support from authorities and media.” (Nastiti, 2017)

123 Appendix L for screenshots from driver communities where they post call to action such no-bid strikes.

124 “Many of these demonstrations and no-bid actions have fallen on deaf ears. However, some have resulted in negotiations with management. In one example, Go-Ride drivers in Bali who had been fined for fictive order (a practice used by drivers to maximise their access to subsidies and bonuses by using a second phone to make orders that they then accept on their Go-Ride account) had their fines reduced when they collectively surrounded the Go-Jek office in November 2015 (Interview with Go-Ride driver, January 2016). In another example, a no-bid action and demonstration outside the Grab office in Jakarta in December 2016 led to an agreement under which Grab management meets with the driver community leaders every 3 months. According to FKBB, these meetings have resulted in changes to Grab’s system, including a new section on the app explaining the bonus system, and drivers now being able to withdraw money from their accounts immediately (Interview with FKBB leader, July 2017).” (Ford and Honan, 2019)

125 Lawi G. “Demo pengemudi Grab ungkap sisi gelap kerja taksi online”. Solopos, 4 July 2017.

and cut through corporate brands, as Grab and Gojek drivers often demonstrate together. Grassroots driver communities that organize and touch base through Instagram channels, Telegram group chats and walkie-talkie applications support for each other on and off the job.

Such a phenomenon draws on the long tradition of mutual aid¹²⁶ within popular economies, in a socioeconomic context moulded by the absence of a welfare state (Ford and Honan, 2019). Most driver communities focus on achieving improvements in their per-kilometre pay and overall working conditions while also becoming familial settings for drivers to find a locus of moral support.

During my fieldwork in Bali in October 2019 I met a driver named Koko who is originally from Surabaya. I met Koko during a late night trip from Canggu to Sanur in Bali on October 2019, during the first phase of my fieldwork. Canggu local taxi drivers are notorious for their hard line against Grab and Gojek drivers, so it is a common sight to observe a wider contingent of ‘independent ojek’ wandering around the area. To note, Indonesians tend to not refer to Grab and Gojek as ‘Grab’ or ‘Gojek’, they are rather ‘ojol’ — an amalgamation of ojek online. Uninhabited by ojol, Canggu made sense for Koko to hunt for a ride. Quite exhausted of surveying the wide area for opportunities to take

126 “Mutual aid also underpinned the predominant organising model among unions in Anglophone countries prior to the development of the welfare state, when workers relied on each other for support on and off the job... This model of collective responsibility between members meant the unions were largely horizontal in structure and required social, not just economic, participation (Lynd, 2015). The mutual aid model of unionism began to lose ground from the early 20th century, when responsibility for welfare provision began to shift onto government and employers (Bacharach et al., 2001; Jarley, 2005; Wills and Simms, 2004).” (Ford and Honan, 2019)

photographs of locals' posters/warning signs etc. against ojol, I decided to retire back to Sanur where I stayed.

Approximately mid-way, as we were conversing of our mutual backgrounds during the ride, Koko fell silent for a longer-than usual while, as if carefully pondering or trying to remember something very specific. He then suddenly pulled up, seemingly worried about the motorbike. He vigilantly checked the tires, noticing one was going flat — which, for an outsider, would not at all be obvious from a mere glance, demonstrating his familiarity with the subtle dynamics of his 'machine'. He proceeded to apologise as he needed to search for the nearest technician. Unlike many other countries, motorbike technicians are an extremely common business in Indonesia, often open 24/7 and due to a high supply of their craft among the public, their expertise tend to be accessible at very affordable rates. We exchanged numbers, as I found it intriguing that he came from Surabaya to work on his own in Bali without becoming an ojol. As he wandered off slowly to a nearby technician, I was now in 'green territory' to call an ojol and made my way back to Sanur from central Denpasar on a Gojek. Our conversation with Koko continued through WhatsApp after I left the field, as he explained that most his friends back home in Surabaya were ojol and were familiar with people who organised protests against both Grab and Gojek. He then mentioned he would be back in Surabaya end of January so I figured it that would be a useful lead for me to follow. I proceed to conduct fieldwork in Surabaya during early 2020 and prompted him to be a gatekeeper for me in the

city so that I could to meet local pengojek who were involved in protests against their companies.

After some planning regarding what to do in and after Surabaya, I booked the tickets for the second phase of the fieldwork and landed in Surabaya on the 20th of January 2020. Koko had already arranged a pick up for me with his Grab driver friend (as he only had a motorbike that would not suit my luggage). Throughout the hour long trip to my accommodation, he gave me eight more Whatsapp contacts who were all either Gojek and Grab drivers, telling me to mention his name would be sufficient for me to meet them regarding my research. I immediately started contacting them to meet. The next couple days I got to meet five of the drivers at their convenience, often during odd hours and random spots throughout Surabaya, as they fortuitously circuit the urban fabric according to the orders they get and find little time to rest with daily 'ride targets' hanging over their heads.

The third night I was in Surabaya, Koko texted to inform me that he will meet a group of his ojol friends at their base near his local mosque, and I was welcome to join. He mentioned this particular group would be more familiar with the protests against Grab or Gojek, and indeed, as he introduced me to them when we met, he emphasized to them that I was interested to hear about such phenomena, if possible. These base camps tend to be tent-like structures on the side of a road or at a landmark or eatery, where the drivers will wait for orders, recharge their phones and hold casual meetings. They are also in constant contact through the WhatsApp messaging service (Ford and Honan, 2019).

In such setting, throughout our initial conversations, I felt a couple of drivers grew slightly suspicious when Koko mentioned that, as I was closely observing their reactions while Koko was addressing them. To create some aura of familiarity, I proceeded to introduce myself by first uttering ‘assalamalaikum, saya dari Turki’ — to mention that I am Turkish almost unfailingly helps me to break the ice across any context in Indonesia, even in Hindu Bali, I could in-evidently claim it lets me appear as a more familiar bule, than say a Western European or American.

Once the atmosphere warmed-up, one of the drivers took the phone off another one’s hand, as he was gaming on it, told him to listen to me and help out. That particular driver, ‘Dicky’ seemed to be more knowledgable about the communities of ojol¹²⁷. He explained to me that many drivers are part of ‘laskar’ — a decentralised informal youth community that is prevalent all across Indonesia in different objectives and structures yet always the same name. Laskar members tend to be Muslim, young and community oriented, who in many cases forming cult-like groups to ‘govern’ certain areas of daily life,

127 “Most online drivers are part of neighbourhood-based driver communities. Some of these communities have chosen to affiliate to either a driver association or a union. Like the communities, driver associations tend to represent either car or motorcycle drivers rather than organising both. They have developed in a haphazard way, and now compete with each other. Only one union, the SPDT-FSPMI, has made much progress in organising the online drivers, and its membership is very small in comparison to the driver associations... Most prevalent are the neighbourhood-based driver communities, which usually limit their membership to either car or motorcycle drivers. Each community has a physical meeting place called a ‘base camp’.”
– (Ford and Honan, 2019)

similar to the banjar in Bali, only this time without any particular territorial belonging and more concentrated in labour issues.

Gojek drivers do gather and act outside the 'laskar' ecosystem under 'regular' (Dicky's exact vernacular) communities. These regular communities tend to be smaller, more locally organised (around a certain base or two) and keep in touch through Whatsapp and Telegram group chats. One of my interviewees in Bali, Wayan was a part of a community of Gojek drivers, they all contribute a certain amount around 20k per month to take care of each other. They organize through Whatsapp/Telegram groups. Gojek acknowledges these communities but not necessarily collaborate with them in solving their everyday issues. For example, the company talked with the local taxi drivers to negotiate their presence in Bali but not too many times or for too long. In a sense, they just let the situation fix itself. Any protest, often stimulated by the mass suspension of fellow drivers' Grab or Gojek accounts, is planned and follow through in such virtual groups. Dicky mentioned these group chats and communities are easy to join through friendships, and they have no real procedure of due diligence.

II. Commodification of Labour within Popular Economies

Labour studies literature have long assumed that work can be roughly divided into skilled and 'unskilled' forms, implying some forms of labour constitute no level of skill. This is an assumption that is commonplace across the board in

every genre of the wide spanning literature. I contend there is no ‘unskilled’ labour whatsoever. Every form of labour requires a particular set of unique skills, though some skills are valued less due to their high supply in their contexts. As a relevant example, being able to ride a motorcycle through urban traffic may be seen as unskilled labour in Jakarta or Denpasar, yet it is considered a rare skill in Istanbul, where motorcycle taxi drivers make up to 5 times the average national salary. It is important to note that contemporary scholars such as Simone (2004), Kusno (2017), Malasan (2017) and Sopranzetti (2018) frequently and illustratively imply the underrated value of ‘skills’ that are required to perform various forms of seemingly mundane crafts (street food preparation, improvised urban transportation, construction work et cetera), but do not explicitly assert such a position.

As opposed to specialized services that require a personal edge - certain skills in the labour market come to be considered ‘commodified’ by corporations. The smaller the range in service quality consumers expect from the workers who perform the job, the closer a service is to considered to become a commodity. Gojek in its most crude definition is an intermediary digital platform that serves as a two-sided marketplace that is an automated taxi dispatcher for the masses. The skill it takes to drive a passenger from point A to point B is assumed to be not particularly unique by employers. Driving a motorcycle can be observed to be something that practically everyone in Indonesia knows how to do and as a result the cost per mile driven does not boast a high premium and does not vary significantly in price. This also discourages ‘haggling’ as for commoditized

platform services, the process of customer conversion (sales term for getting someone to take your taxi) is automated. Whatever taxi shows up in front of a passenger waiting for a ride, chances are they are getting in. — no need to wait at a port or subway exit to grab customers. There is no ‘sales pitch’ needed as no further convincing and negotiation is required. Given the user will not be able to immediately discern that some other taxi driver would be able to do a meaningfully better job driving him or herself across town, the transaction is in a sense a ‘trust-minimized’ version of the independent ojek practice.

Users of Gojek trust the overall brand and negotiate with the platform itself, rather than directly with drivers whom they would know personally to run errands for them¹²⁸ and shuttle their items around town. This process of centralised intermediation removes the drivers’ agency of determining prices and exact routes, rendering their work a fungible product and hence a commodity. As Gojek expanded across Indonesia, many forms of urban relationships became commodified and impersonal, as every ride is now with

128 “Nguyen, in her late 50s with a ready smile, has been driving a xe ôm moto taxi in Hanoi for 17 years; today, she rarely has a passenger whom she doesn’t already know. “Most of my customers, like me, live in this alleyway,” she says, sitting on a low blue stool at a tea stand in Hanoi’s Old Quarter. “Some work in banks, and they don’t have time to pick their kids up, so I do it. Others are elderly or blind, and they need someone to take them around. If anyone needs to carry their food from the market, they’ll call me, and I’ll go and collect it.” There are around 10,000 xe ôm drivers still working in Hanoi. Most are male, in their 50s, and have little formal education. Few regularly use smartphones... The almost familial relationships that xe ôm drivers have built within their communities are practically impossible to replicate through a one-size-fits-all technology platform, demonstrating the difficulties that venture-backed unicorns face as they try to build regional businesses.” — Lampard, A. (2021, January 12). The motorbike taxis versus the unicorns. Retrieved January 13, 2021, from <https://restofworld.org/2021/fighting-off-the-unicorns/>

someone new — a fleeting experience both for the driver and the passenger despite its physically close and dependent nature¹²⁹.

Along with the basic benefits of safety, certainty and camaraderie it arguably presents to its ecosystem of users and drivers, the platform does not operate in a technoutopian fantasy. The digital platform rather finds a way to thrive in a practically messy and intellectually conflicted form of compressed sense of temporality. Smartphone technology in general directs us towards a passive trust in widely delegated and obfuscated algorithms (short-handedly called ‘apps’), reforming our daily routines and our thresholds of patience and expectations of comfort (Berry, 2012). The omni-presence of Gojek in urban settings create an ambitious tendencies of automated and accelerated modes of action. On-demand services compress everyday experiences of movement and perceptions of ‘speed’ — catalysing a growing expectation of human effort (labour), in its most mundane sense, to be ‘on-demand’. Food should be ready at the door in 20 minutes, traffic must routinely be beat in the quickest fashion

129 “Many consumers in Vietnam prize the personal relationships they have built with their xe ôm drivers and are unlikely to sacrifice those for anonymous reviews on smartphone screens and impersonal conversations with customer service centers. “When Grab and Gojek expanded from nothing to everything in the matter of a few years, those relationships became commodified, they became impersonal. Every Grab ride was with someone new,” says Onat Kibaroglu, a Ph.D. candidate at the National University of Singapore who researches the ride-hailing industry. “The rudimentary business model is the same, but there is no intermediary. Now you have a third party that matches you up with an algorithm and gives you a cheaper price. The business model from afar seems the same, but it’s actually completely different.” Nguyen, the xe ôm driver, is not worried for her business. “No, not at all,” she says, as she waits to take her next passenger to the bus station. “All of my clients know me. They’ve got my number, and anywhere they want to go, they just call me.” — Lampard, A. (2021, January 12). The motorbike taxis versus the unicorns. Retrieved January 13, 2021, from <https://restofworld.org/2021/fighting-off-the-unicorns/>

possible, a package should arrive at its destination across the city within the next hour. Any deviation from these novel temporal standards within urban spaces are collectively perceived as a nuisance and a disintegration of urban infrastructure, similar to the experience of water pipe leakages and electricity outages.

Contemporary urban perceptions of temporality are thus increasingly squeezed into bits (in both literal and technical meanings of the term), due to the widespread prevalence of ‘on-demand’ technologies¹³⁰. Keeping up with increasing speed and momentous action is not the momentous exception, but the routine, the collective norm — raising the bar most significantly for workers. Just as a leaking pipe is replaced by another identical one, a Gojek driver may immediately be replaced with another one in any case of nuisance and mishap. Just in every fundamental industrial shift, the working class is expected to keep up with a new temporal standard and be consistently racing against time (Castells, 1996), this time not within factory floors but across a vast urban setting.

The vast presence of Gojek has significant implications in regard to economic value creation in urban spaces. As such platforms become of everyday usage, certain personal assets become ‘idle’ and time that is not dedicated work (spare time) now becomes an ‘opportunity cost’ (Rosenblat, 2018). Michel Foucault

130 “...the meaning of on-demand is not necessarily “now”, but “when I want it” —Madden, S. (2017, August 18). Read This Before You Build Uber for X. Retrieved December 16, 2020, from <https://blog.ycombinator.com/read-this-before-you-build-uber-for-x/>

(1977) illustrates idleness as a threat to stability (read: profitability) within the modern society¹³¹, potentially a form of passive resistance against being disciplined into a particular schedule. One of my interviewee pengojek in Bali mentioned that when he began riding for Gojek "...it was first to fill in empty time". He noted that that he typically works 12 hours a day, 6 days a week on average. Given he is expected to be at the weekly ceremonies at his village, so he turns off the application once a week and "...become offline".

Gojek offers 'bonuses' for completing a set of rides or deliveries (typically five) and most drivers depend on these bonuses to make enough to cover their daily gas, maintenance, data and in some cases rental expenses. Many drivers I have met throughout my fieldwork showed me their version of the Gojek application, where the user interface is meticulously designed to keep you online, gamifying your daily job schedule by incentivizing you to go for just one more ride to complete the next set for the tranche of bonuses. The bonuses tend to be convincing amounts, often worth two or three times a typical ride (up to 100k rupiah). Alex Rosenblat (2018), within her illustrative ethnography on Uber drivers in the US, describes this system as hanging the carrot in front of a rabbit to keep it running. In such context, many workers who, especially in the Global North or Singapore, switch to driving for Uber/Lyft/Grab et cetera to 'not have

131 "... a complex unity a new sensibility to poverty and to the duties of assistance, new forms of reaction to the economic problems of unemployment and idleness, a new ethic of work, and also the dream of a city where moral obligation was joined to civil law, within the authoritarian forms of constraint. Obscurely, these themes are present during the construction of the cities of confinement and their organization". — Foucault, Michel. "Madness and Civilisation", Selected Interviews and Other Writings, 1972-1977.

a boss' find themselves working for one anyway, only this time it is a rather dynamic, faceless and subtly operating algorithm.

Uber, as documented by Rosenblat (2018) tracks a variety of personalised statistics such as ride acceptance and cancellation rates, hours spent logged in to the application and number of trips completed, using the accelerometer in drivers' phones along with GPS and a gyroscope which record drivers' performance in granular detail. Using such data, the platforms display selected statistics to individual drivers as motivation tools, such as 'You're in the top 10% of partners!'. Such measures of management resemble a Fordist risk versus reward system with classic Taylorist efficiency principles. Given such a relationship between labour and capital occurs across a vast geography of cities, it can be observed that in a post-Fordist context, labour force is typically not confined into factory and workshops, but is diffused into the society, it as leaks out and over conventional boundaries (Raunig, 2013), to circulate within the traffic jams of metropolitan cities¹³².

Rearranging everyday frictions round the clock, Gojek catalyses a revamped and digitalized Taylorist industry. Gojek's presence within the digital skin of urban Indonesia showcase the ultimate form of scientific management of labour, where workers' efficiency — both in relation to their specific spatial position

132 "...workers during the 19th Century used to shoot clocks in the city squares denouncing the time mechanism of their exploitation. Now, in their rebellion, precarious workers need to shoot the calendars which mark the separation and non-continuity of time and their alienation... like the migrant, the precarious worker is constantly looking for a place to rest". — Negri, Antonio, "Counter-melody". 2013.

within a city and their speed of service delivery, measured in seconds — are optimised through digital algorithms that are run by artificial intelligence. Such extreme level of labour productivity fits into the analogy of capitalism as “...a battery that continues to accumulate energy without a pause — the energy of labour” (Boutang, 2012). From such a standpoint, the widely used yet often narrowly understood concept of ‘on-demand platforms’, must be assessed in light of the key concepts of ‘temporality’ and ‘power’. This discussion thus aims to demonstrate the ‘non-neutral ’nature of operational features in ride-hailing algorithms and their managerial power informed by core Taylorist principles. Similar to how the introduction of horse-trams in Jakarta disciplined people to think in ‘clock-time’ (Cote, 2014), an analysis of the ride-hailing software portrays how the mainstream prevalence of ride-hailing platforms alter the contemporary notions of ‘time’, ‘risk’ and ‘reward ’in regard to everyday urban living and labour.

The centralised operations of Gojek streamline the company’s expansion into highly disparate contexts throughout Southeast Asia, but it does result in mishaps for their own drivers on a day to day basis due to the occasional abuse of the system by their vast user base. A common issue with having a faceless boss is the phenomenon of ‘order fiktif’ (fake order). The ongoing issue was quoted frequently as a significant nuisance during my interviews, as many users Gojek — either just for ‘fun ’or sometimes through entering a mistaken address — order food through to the app, only to leave the driver with it, stranded. The driver drops by the given restaurant, pays through his own pocket to pick up the

food, arrives at the designated address, finds no receiver. As many users still use the apps ‘cash-based’, the driver is compensated only weeks later after tedious deliberations with their local ‘community leaders’, who has to send the complaints up to the nearest ‘management office ’(could simply be a Gojek employee with a phone in more off-the-grid areas) so the drivers can get refunded. For workers who depend on \$5 to \$10 of work to sustain their livelihood, this common ordeal is notably distressing.

III. Digital Translation of Perpetual Precarity

Most vividly since the throbbing caesura of the Global Economic Crisis of 2008 that dented the flow of socioeconomical history of the West, the informal economy has been expanding into the contemporary labour market. Upon such demographic trends, discourses of the ‘future of labour’ both in academic and popular literature (Graham 2018; Kessler, 2018) are boosted further with the economic overturn caused by the COVID-19 pandemic (Habir and Wardana, 2020). The fundamental shift of this era stems from the observation that the significant portion of the jobs that are lost to these crises, are not regained in the same form and ‘quality’. Formal ‘9 to 5’ corporate jobs tend to come back as informal “gigs” — a performative term that finds its etymological roots in improvised musical performance, most typically a night of performance.

Gigs are temporary jobs with an uncertain future, that boast little to no social security compensations, retirement plans or contracts. Initially glorified as an

opportunity of ‘freedom’, ‘being your own boss’ and joining the ‘future economy’, typically by platforms that catalyse this socioeconomical shift, the ‘gig economy’ in developed economies has been commonly regarded as a novel phenomenon ushered in by the omnipresence of smartphone based platforms. In his widely cited book “The Fourth Industrial Revolution” Schwab (2017) gives an account of the changing nature of work, noting “today, the on-demand economy is fundamentally altering our relationship with work and the social fabric in which it is embedded. More employers are using the ‘human cloud’ to get things done” (Schwab, 2017).

Such discourse begs the question, why now? Why is it that the global conversation on informal labour has proliferated in the last decade, even though it has already been existent in the West in terms of significant numbers of freelance workers and independent contractors (albeit at about a third of the current rates) even before the 2008 crisis? As much as it has not been arguably prevalent and common as in the East to form a vivid street economy. Kessler (2016) exemplifies how many professions such as truck drivers, IT experts and accountants have always tended to be independent contractors, working in conditions that are not too different from Uber drivers of the current generation. Estimates presented in the book claim that the amount of freelancers in the overall labour force jumped from an already 13% in 2009 to around 30% in 2016 in the United States and Western Europe. Freelance work was therefore hardly a completely new phenomena, anywhere in the world, regardless of spatial and temporal disparities.

Kessler (2016) argues that Uber played a significant role in this both discursive and functional (offline to online) shift, as it “...took a trend among corporations — employing as few people as possible — and adapted it for the smartphone era”. The very common usage of the phrase “Uber for X”¹³³ whenever describing a new platform business model to the general public is a quintessential marker of the significance that Uber plays in the imagination and direction of the new generation of entrepreneurs¹³⁴. In a sense, Uber is the platform economy’s posterboy, becoming synonymous with the emerging digital business model. Uber as a ‘super-app’ like Gojek, is a digital application that unites “...disparate technological forces into a power greater than the sum of its parts” (Rothstein, 2015). Bringing together the technologies of the car (or the motorcycle and rickshaw), the smartphone and whichever relevant tools that are involved in the production of the specific goods and services demanded by its users, Uber is an intermediary digital platform, essentially an automated dispatcher for the masses, that has significant implications in regard to economic value creation.

133 Product Hunt. (n.d.). Uber for X. Retrieved December 16, 2020, from <https://www.producthunt.com/e/uber-for-x>

134 “In the taxi business, instant service (i.e., the “how”) is fundamental to the service itself. It is rare that one plans their day around transportation – typically it is the opposite. Transportation service is needed immediately when requested, and is typically something that occurs in short spurts multiple times a day (think not just taxi, but bus, subway, etc.). Uber’s “tap a button for service” execution is instrumental in reaching this goal. However, if a consumer needs someone like a tutor or life coach or therapist, for example, then that is not something (or someone) they necessarily need within the next 2-4 minutes. Not only that, but service sessions do not just last a few minutes – they can be hours in length.” — Madden, S. (2017, August 18). Read This Before You Build Uber for X. Retrieved December 16, 2020, from <https://blog.ycombinator.com/read-this-before-you-build-uber-for-x/>.

At the global scale however, the demographics of this newly emerging ‘human cloud’ in the North is arguably the equivalent of the already ubiquitous ‘urban gray economy’ in South. Primarily fulfilling the demand for the type of jobs that are considered dangerous, dull and dirty: “The Three D’s... perpetuated by the roots of the robot in a fictional narrative of human-made machines taking over serf labor” (Rothstein, 2015), the on-demand street economy in the South is indeed not indeed a novel form of labour¹³⁵.

This apparent anachronism can be unravelled, once the concept of ‘future’ is approached in its spatial and multi-layered nature, instead of its more common temporal and one-directional perception. What is now regarded as the ‘future of work’ in the North has long been widely prevalent in the South. Indeed, the notion and practice of a precarious and provisional (Garcia, 2018), street economy has long been embedded within the socioeconomic composition of Indonesia, given the practice of gig jobs in urban Indonesia are rather perpetual (ever-lasting as decades long careers) than temporary (unlike the literal implications of the term ‘gig’). In his ethnographic account of contemporary Saigon, Erik Harms (2013) depicts the temporal facet of gradual eviction in a rubble-laden site of demolition in the Vietnamese metropolis, where thousands of households are being evicted to create an ambitious “New Urban Zone”. The

135 “There has been widespread disruption in Nigeria’s commercial capital, Lagos on the first working day of a ban on motorbike- and tricycle-taxis. There were long queues at bus stations even though extra transport was laid on, while some walked for miles. Commercial motorbikes are the most common form of public transport in the city of at least 20 million people, which is notorious for traffic jams.” — Orjinmo, Nduka. “Lagos Motorbike Taxi Ban: Chaos as Nigerian City Removes Okadas,” February 3, 2020. <https://www.bbc.com/news/world-africa-51353665>.

slow eviction scheme pushes many residents into an alternative zeitgeist of enforced waiting, marked by a suspension in time, creating a sense of never ending limbo: “The way we experience time is always socially constituted. Everything Lefebvre says about space, one might say, could also be said about time. In many ways this is obvious: One does not need a degree in anthropology to know that a “New York minute” appears to pass differently than a solemn “moment of silence” before a sporting event, or that “time flies when having fun” (Harms, 2013). Such phenomenon is a vivid example to describe the ‘usual uncertainty’ many pengojek face in regard to their jobs, a job that is both ad hoc and perpetual, a craft that is ephemeral and permanent simultaneously.

IV. Emancipatory Technology

Through creating a rather simple (in industry terms, user-friendly and ‘human-sounding’¹³⁶) interface that does not require much technical knowledge to access work opportunities and transportation alternatives Gojek eased, legitimised, modernised and rationalised existing habits of informal transportation and transactions within popular economies — transactions and crafts which were previously deemed ‘illicit’ and of ‘lower-class’. As urbanist literature increasingly suggests that cities ought to be evaluated for the extent to

136 An expression in user-experience parlance, where an application employs everyday language instead of a ‘machine-like’ vocabulary within its frontend user interface. Many of Gojek’s publications across platforms such as Medium and LinkedIn use this particular terminology in order to communicate its user experience.

which they respect ‘the right to the city’ (Harvey, 2008; Bunnell and Goh, 2020), this section aims to detail how the presence of the platform lowers the barriers to entry into the labour market for domestic migrants. As Geoffrey West once put it “...nobody moves to New York to save money on their gas bill... [we] come to get a job and follow our friends, cities are all about the people”¹³⁷. Bearing in mind such a fundamental and universal phenomenon, the platform can be framed as a digital translation of the social dynamics of urban Indonesia, as its core business model of allows anyone with a driving license to take up a job – rendering it an emancipatory technology.

Popular economies of urban Indonesia are built upon a vast supply of domestic migrants, moving in typically a circular or seasonal urban-rural migration chains. It has always been much easier to become a pengojek than finding a formal job in a new setting for a migrant, but Gojek further brings down the entry barriers and hence offers enhanced agency, as the mobile platform technology lessens importance of local geographical and traffic related knowledge (due to the widespread prevalence of GPS systems on mobile phones) and social capital (the ability to rapidly sign up for a job). Through the deployment and training of smartphones, mass recruitment events and ease of access to relevant social connections over social media, becoming a pengojek is hence rendered much easier than ever, creating a positive network effect where

137 Lehrer, Jonah. “A Physicist Solves the City.” The New York Times. The New York Times, December 17, 2010. https://www.nytimes.com/2010/12/19/magazine/19Urban_West-t.html.

the supply of more drivers incentivise more users as the waiting time and prices for fares are dramatically reduced.

Indeed many Gojek drivers act as recruiters themselves, as I have observed in my brief fieldwork in Batam. The signing up process of becoming a pengojek is streamlined through ‘recruiters’ that prevail in multiple WhatsApp or Telegram chat groups, not necessitating entering certain ‘offline’ social circles, which tend to have more stiff boundaries, to be able to obtain provisional (although in practice often permanent) job opportunities.

Beyond geographical knowledge and social capital, for many Indonesians, regardless of their urban or rural upbringing, the learning process of driving a motorbike starts almost concurrently with when they start walking, as in one interview with a pengojek the author noted the phrase that Indonesians tend to “...wear the bikes like [they] wear shoes (...sepeda seperti sepatu)”. It is no exaggeration, given how agile yet seemingly comfortable (albeit with serious physical pains induced through tough and persistent labour) they are in using the motorbikes in one of the world’s most (if not the most) chaotic traffic flows. This mainstream knowledge of motorbike driving is also a key advantage for both the migrants in terms of minimising their potential job training and also the companies which ‘partner’ with them, maximising the relevant and available labourer pool. This can be read as a demographic feature, that for example is not true for Istanbul, another gridlocked city, yet with much less motorbike solutions for passenger mobility — hypothetically due to not enough knowledge, trust and interest in using motorbikes for daily commutes.

In contrast to their widespread popularity¹³⁸ in Java, Sulawesi and Sumatra however, the prevalence of the on-demand platform has been a flash-point of resistance and violence in Bali. Unlike their perceived benefits of providing certain degrees of freedom in metropolitan Indonesia, these ride-hailing platforms disrupt a societal system that has been embedded within Balinese culture. Regions in Bali are subdivided into a total of approximately 1000 ‘banjar’, a local form of rural communes, typically at a size of a square mile and approximately 500 people (80-100 families make up a banjar). Each banjar cooperates aspects of everyday life at regular community meetings – deciding on local issues such as the use of agricultural land, punishment of local crimes and the ‘fair ordering’ of picking up rides for local taxi drivers. Banjars have their own ‘pecalang’¹³⁹ who direct the traffic during ceremonies. One can notice the boundaries of a banjar by keeping an eye out for the signs on roads and their central building ‘bale banjar’¹⁴⁰. Banjars handle daily governance of their small population by issuing identification documents, developing basic infrastructure such as roads, allocating labour for village cleaning and resolving everyday petty crime. Typically, in every banjar there is a head, secretary and an accountant. People contribute a certain amount (informal tax) and the banjar is

138 In a rather notable case, a child born on February 2019 in the in the Lampung province, was named after GoPay, the e-payment platform by ride hailing unicorn Gojek. “Parents name newborn son ‘Gopay’ after Gojek’s e-payment service, get Go-Pay credit as gift”, Coconuts Jakarta, 21 March 2019. <https://coconuts.co/jakarta/news/parents-name-newborn-son-gopay-Gojeks-e-payment-service-get-go-pay-credit-gift/amp/>

139 Colloquial for guard, vigilante and makeshift traffic police.

140 Appendix M for photos of “pecalang” of Bali.

expected to take care of its own area, more so than the national government. Within such a socioeconomic context, significant occurrences of conflict between on-demand platforms' drivers (typically immigrants from Sumatra, Sulawesi or East Java) and local Balinese taxi drivers have broken out since the platforms launched in Bali in 2015¹⁴¹.

For immigrant workers, becoming taking up the job of riding an ojek has been made much easier with the advent of the GPS-based ride-hailing platforms, as the virtual maps embedded into such mobile applications let non-locals to leapfrog into having a thorough geographical knowledge of a foreign land. GPS technology resembled science fiction in the early 2000s with a few references to it in popular spy movies (Stone, 2007)¹⁴², yet it rapidly became an everyday and almost mundane technology within less than a decade.

Through a digital translation of its physical infrastructure on a screen, a city simulates itself within an embedded electronic culture and economy, creating its own virtual double through a complex architecture of its intricate bits of information networks (Davis, 1995): "Grafting technologized knowledge onto what "locals" are supposed to know intimately, that is, the city, enables outsiders and new migrants to no longer learn the city in the old way. The ojek was once a superior resource of local geography. Ask and you shall receive a

141 Jacobs, Harrison. "Why should we make foreigners rich? : Taxi drivers are taking on Uber and Grab in Bali, and some are turning to violence". 23 June 2018. <https://www.businessinsider.sg/uber-grab-bali-attacks-taxi-drivers-2018-6/?r=US&IR=T>.

142 Indeed the founding story of Uber in the mid 2000s is traced back to one of the founders' astonishment of a James Bond scene where a car is moving through the map in a GPS system. 10 years on, the company has realized this fictional context en masse.

complex and knowledgeable answer of turn left-left-right-left-right. How is the man of the street to compete with Google Maps 'ability to either make the city legible?' (Lee, 2018). This phenomenon evokes how Lefebvre (2003) presented a seminal vision for 'the city', in which its users (migrants and 'locals' alike), manage, negotiate and mould urban space for themselves, beyond the control of both the state, traditions and industrial powers. The everyday assemblage of GPS and ride-hailing technologies, therefore, assists otherwise 'alien' immigrants to carve out a living for themselves, however perpetually precarious.

This renders the platform to be an emancipatory form of technology as an inclusive tool for new comers to 'a city', who would otherwise have a lot less means of penetrating the stiff social barriers of entry in a conservative culture like Bali. In reaction to such a dilution of their exclusivity within the Balinese labour market, banjar affiliated local taxi drivers have erected signs demarcating certain no-go zones¹⁴³ and aggressively enforcing those territorial lines in multiple occasions¹⁴⁴, struggling to keep out the online platforms' drivers, whom work with much more competitive fares and through a wider online client base for ride orders.

143 Appendix M for such signs photos taken during my fieldwork in Bali between late 2019 and early 2020.

144 "On the fiercely tribal island, an influx of tourist dollars has steadily grown the local economy even as a sense of territorialism reigns. Traditional taxi drivers speak of Bali's 'local wisdom', which dictates that they alone should attend to the needs of tourists staying in their banjar, or local community". — Jacobs, Justin. Southeast Asian Globe. May 7 2018. "Traditional Bali taxi drivers 'aggressive war on ride-sharing apps" — <http://sea-globe.com/war-on-ride-sharing-apps-bali/>

My main interlocutor in Bali, Gede is a local independent driver living near the Sanur area of Bali, who also drives for Gojek, with strong command of English and a decent level of knowledge regarding the history of the island. Gede is part of 'Bali Innova Community', which is a community of Toyota Innova owner taxi drivers, who contribute around 10k rupiah per month to form an informal safety net for each other in cases of accidents. Toyota offers them discounts in repairs, tyre changing. There are many groups like this since a long time, but they proliferated since Uber entered the market, groups like 'UBD' (United Bali Drivers) formed to collaborate and mitigate the problems Uber cause and also have the collective leverage to ask for bargains and perks from the local distributors of Japanese automotive companies who lease/sell them the taxis.

One of the first things I learnt from Gede was that first metered taxi appeared early 1990s with BlueBird, who entered the Balinese market via collaboration with travel agencies, at a time tourists mostly came to Bali with travel agencies. In his own words, "...BlueBird in the early 1990s had the same issues Gojek has today". Gede also mentioned how many Gojek drivers in Bali are from the neighbouring islands of Java, Sulawesi and Makassar and "they will work anywhere... at Friday prayer time it is very difficult to get a Gojek ride, so obviously immigrant Muslims drive for Gojek, we can tell from this phenomenon". According to Gede, "... the biggest fights happened in Ubud and Canggu provinces as those areas they are serious about their drop only policy... once they do drop-only, that also discourages "the drop" option too, drivers do not want to return empty".

In their own fieldwork in Denpasar, Makassar and Jakarta, Michele Ford and Vivian Honan (2017) have noticed that Gojek has observably benefited from its nationalist and ‘indigenous’ positioning. Setting itself apart as a ‘local’ interlocutor with relevant actors in contexts of backlash and aggression (in contrast to Singaporean Grab and American Uber), Gojek has been less of a target in the execution of governmental regulations and street brawls between online platform and taxi drivers on the ground. Notable though, during my fieldwork in Bali I noticed that there is a latent nostalgia of having Uber around. Drivers across Indonesia (also in Singapore, in line with the findings in my previous fieldwork during early 2018) tend to speak fondly of Uber and none are happy it left. They univocally claim Uber gave wider insurance packages and better support to their drivers.

It can be speculated that that the resistance by the rural banjar taxi drivers against Gojek drivers is an existential one. It is about whether or not a form of technology should ‘be’ somewhere, rather than ‘in which ways’ or ‘at what cost of labour’. All protests are not created equal — the seemingly similar ‘anti-Uber’, ‘anti-Grab’ or ‘anti-Gojek’ protests across Southeast Asia tend to be concerned with which limitations the ride-hailing technology should operate and more often at what labour cost. In Medan¹⁴⁵, the protests were about lay-

145 “Drivers of online transportation services Gojek were seen carrying out a demonstration carrying banners in front of Gojek office at North Sumatra, Indonesia. During demonstration drivers online transportation services require a system established by the company that is considered detrimental to drivers and unilateral termination of partners by Gojek company”. — “Drivers Of Online Transportation Services Protest In Indonesia”. November 22, 2018.

offs by the company due to alleged fraud of a large group of drivers. In Jakarta, both Grab and Gojek drivers, often in collaboration, protested their pseudo-employers for lowering their bonus rates, hence their daily income¹⁴⁶. In Bali, however, the protests are fundamentally about ‘platformisation’. It is a resistance by the banjar taxi drivers to not be ‘digitised’ and therefore be ‘disciplined by an algorithm’. Balinese banjar-based taxi drivers are thus not simply protesting against ‘Gojek’, they are indeed protesting against becoming urbanised and commodified.

In light of this hypothesis, the linkages between ‘platformisation’, ‘digitisation’ and ‘urbanisation’ instigate the concept of ‘biopower’ to be used as a theoretical tool. Michel Foucault (1976) illustrates biopower as a mechanism of rendering an individual ‘modern’, ‘malleable’ and ‘orderly’. Biopower operates on the site of an individual as a form of ‘disciplining the body’, enabling the individual to fit an emerging context of industrialisation and urbanisation. In contemporary urban contexts, keeping up with increasing speed and momentous action is not the exception but the norm, setting the bar for ‘on-demand’ workers to be consistently ‘racing against time’ (Castells, 1996).

Barcroft Media via Getty Images. — <https://www.gettyimages.com/detail/news-photo/drivers-of-online-transportation-services-Gojek-were-seen-news-photo/1064338008>

146 “The demand is still the same, rationalizing the tariff and asking the House of Representatives (DPR) to revise Law No. 22/2009,” — “100,000 Online Ojek Drivers to Hold Protest on Monday”. 11 April 2018, Tempo.Co. — <https://en.tempo.co/read/917493/100000-online-ojek-drivers-to-hold-protest-on-monday>

The Balinese taxi drivers' resistance to Gojek therefore, can be read as a stand against becoming 'modernised' and 'industrialised' by digital platforms¹⁴⁷. Such a phenomenon presents a unique and compelling opportunity for an ethnographic investigation to inform urban theory. The expansion of the platform into Bali, and the potent resistance that they have experienced is an archetypal case study to illustrate the expansion of urban circulations across Southeast Asia and an existential resistance towards them. As anthropology is primarily concerned with those particular moments where technology intersects personal experience (Waterson, 2006), the methodology of employing ethnography in order to narrate such a case study offers novel insights into social, economic and political processes.

V) Perantau in Perpetual Navigation

In her account of how the platform moulds the contemporary form of urban infrastructure Doreen Lee notes "...as the cities of Southeast Asia such as Jakarta, Manila, Singapore, Bangkok, Kuala Lumpur move toward a model of urban development designed to make each city more global, more

147 It is notable that this sentiment is not necessarily shared by all Balinese drivers I have encountered during my fieldwork. In one of my interviews, I asked a pengojek how often he works, he noted that everyday, except for ceremony days, echoing many other Balinese drivers I talked to. When I mentioned taking time off for holidays, he claimed "I am already on vacation with you — this is like vacation for me, not work". I could sense that he saw his driving as an opportunity to improve himself, especially his English language — a method he refers to as 'auto-deduct', so the job felt quite fulfilling to him, at least more than one might initially suspect.

infrastructurally sound, more financially integrated, and more ostensibly creative... we must account for how urban development recasts urban citizenship and belonging along biopolitical and temporal lines” (Lee, 2018) In exploring these lines, this section focuses on the phenomena of merantau, the Minangkabau people’s form of migration from West Sumatra, typically in their early youth to either other islands in Indonesia or foreign countries in hopes of finding employment fleeting forms of work.

The phenomena of merantau is a significant facet of the overall demographical, economical and sociological realities of Indonesia. Nevertheless, quite surprisingly given its widespread prevalence and long history across the archipelago, it is arguably understudied in the realm of Indonesian studies. Although mentioned or briefly identified in various works that centre around migratory trends within the contemporary academic literature (Lindquist, 2010; Hill et al., 2014), arguably the only work that rigorously fleshes out the phenomena in multiple aspects is by Mochtar Naim, throughout his publishings during the 1970s. A prominent Indonesian scholar of the 20th Century, Ali Akbar Navis is also known for his rigorous work on Minangkabau and does touch upon merantau in many of his publishings; most of which aims to document the lifestyle, rituals, and history of this otherwise orally transmitted culture. Nevertheless, the phenomena of merantau tends to be an underlying thread in most of his work and not necessarily the central topic.

The word merantau finds its etymological roots in rantau¹⁴⁸, which in Minangkabau dialect, refers to the areas outside the original land of the Minangkabau in West Sumatra (typically Tanah Datar¹⁴⁹, Agam, Padang and Limapuluh Kota). Merantau is inherently a circular form of migration, as it specifically refers to a form of leaving that, at its core, has the hope of returning. When does one leave and when does one come back is not written in stone, however, as confirmed by both Naim's work and the account of many perantau I have encountered both in the Riau Islands and Java, it is of adat (cultural expectations) to leave (menjadi perantau) after the age of 18 and to return (balik kampung) by your early 30s — ideally after saving enough money to afford a marriage.

In Naim's estimates, which comparatively study both the relevant demographic censuses and the various claims made by perantau leaders in Sumatra and Java, the number of total perantau in the 1960s hover around half a million. Given the exponential population boom, induced by the New Order's emphasis on poverty reduction through the last quarter of the 20th Century¹⁵⁰, this number can only be estimated to have increased in the contemporary era. Indeed, the phenomena of merantau is still very much alive and vivid at our day, as reportedly up to

148 Merantau therefore refers to a state of going as it verbalises this word and similarly perantau, in this vein, is the one who goes on merantau.

149 Hometown of Uswim Varadila, the editor of the SINDO Newspaper in Batam, from who I also gained significant knowledge regarding the phenomenon merantau, especially in the Riau Islands context.

150 Nitisastro, Widjojo. "The Indonesian Development Experience." Singapore, ISEAS, 2011.

90% of West Sumatran youth tends to leave their villages for creating a new life in a different province or country¹⁵¹.

Although internal migration makes up the essence of the archipelago's historically highly mobile society, no other region in Indonesia experiences such a profound scale of constant outward migration, especially within such a specific demographic group: aged 18-30, able-bodied and educated, hence economically highly productive men. The key motives for such sweeping numbers of men leaving their villages at their early youth, as explained by the perantau, is not only the prospects of employment abroad (the pull effect), but also the social stigma of staying behind (the push effect): the very few who opt to stay behind tend to be considered *kelek ibunya* (mother's son, in a negative connotation that implies cowardice)¹⁵². In the same vein, according to many perantau, the further one goes, the better, as it is not uncommon to come across perantau in countries such as the Netherlands, the US and Japan, who indeed make up the bulk of the Indonesian diaspora in these settings.

151 This estimate stems from multiple conversations with perantau, which may be an exaggeration, but is illustrative of the sheer scale of this migration.

152 "One by one, Radjab's friends departed from the village, and he was left alone to contemplate his future. It became obvious that having been in the rantau was not only about gaining experience, but also a criterion for increasing in status in the village or a rite of passage for becoming a man". — Lindquist, Johan A. "Singapore's Borderlands. Tourism, Migration and Anxieties of Mobility." NUS Press, Singapore, 2010.

Such a one-way traffic¹⁵³ of young talent out of West Sumatra of course has serious implications for demographical and economical dynamics in the region, as it constantly experiences a brain-drain¹⁵⁴, compounded by a mismatch in terms of men to women ratio. As a result, the West Sumatran region boasts an agriculture-oriented (less than 38% of the population lives in urban settings¹⁵⁵) and remittance dependent economy¹⁵⁶. A key reason for the overall unbalanced gender ratio is the fact that although it is of adat to return from merantau after a decade or so abroad, reality is that many perantau do not choose to do so. Many get married abroad with local women and tend to obtain skills in the manufacturing or service sectors that are rather irrelevant in the West Sumatran context.

One of such perantau is Armin, a part time taxi driver and pengojek in Tanjung Pinang, who left his West Sumatran village after graduating from high school in 1988 when he was 19 years old. The following section embeds his agile form

153 Although North and West Sumatra are the only two provinces in Indonesia that sustainably experience negative net migration, their population growth rate hovers around +1% (compared to the national average of +1,5%) thanks to their high fertility rates. 2010 Census, BPS.

154 “West Sumatra, then, is left not only with a problem of man-power, but in addition, with relevant problems in economic, social communal, marital and other cultural realms. West Sumatra is left practically leaderless. Leaders of first and second quality leave early, feeling that the area is too small and opportunities too limited, for better career and better future”. — Naim, Mochtar. “Merantau: Causes and Effects of Minangkabau Voluntary Migration.” ISEAS, Singapore, 1971.

155 2010 Census, BPS.

156 Naim Mochtar and many other perantau also noted that these socioeconomic dynamics result in West Sumatra to be a maternal society, as it is the women who tend to facilitate the family finances.

of lifetime migration with the economic trajectory of the Riau Islands since the 1980s. It did not take me long to meet Armin after getting off at the Tanjung Pinang port in central Bintan Island on an early autumn morning, where he was among the small crowd of taxi drivers in anticipation of picking up a foreign clients. From my past interactions in comparable contexts in China (getting off and finding transportation from ports, train stations or airports) it was rather latently embedded in my mind to simply move past the first line of offers, which typically turn out to be “newcomer-scams” that will charge you multiples of the original ride price. In hopes of finding any mode of public transportation, ideally a Gojek stand, I made my way out of the port entrance, only to be greeted with a drowsy ‘pangkalan ojek’.

Unlike the front line of taxi drivers, they did not seem too enthusiastic to approach me, given I had a luggage that would not fit the ergonomics of their sepeda motor. Realising my available options, I swung back into port building and started to tip toe around the line of the drivers who were still in hunt for passengers in various charming modes of local decorum¹⁵⁷. Doing so, I dodged into Armin, who would be my companion in Bintan ever since. Any public context in Indonesia is a social context. Unlike their an-hour-afar neighbours in Singapore where in public settings, say waiting for a bus, sitting in a taxi or

157 “Often these men would line up outside of train stations and yelling random, popular names like ‘John! Mary!’”, just in case you would turn your head. If eye-contact was made, consider yourself ready for a ride”. — Maulani, Anisa. “Indonesia’s love affair with ojek is turning into a marriage”. e27. 24 July 2017. <https://e27.co/come-long-way-tribute-ojek-men-women-20170724/>

eating out, you would be treated to complete anonymity (with the occasional exception of coming across an extroverted uncle across the table at a hawker centre), Indonesians tend to be formidable in striking up conversations from the slightest opportunity.

My fieldwork therefore, was already up and running the moment I got in Armin's car — which he rents on a daily basis, typically from Fridays to Sundays from the Indorent company. As he asked me why I was in Bintan, I got to briefly introduce myself, my current research and therefore my interest in finding a pangkalan ojek I can approach¹⁵⁸. As he did not seem too convinced I was simply looking to talk to pengojeks, he changed to topic to food. That is how we stopped by a Restoran Masakan Padang on the road towards Tanjung Pinang's centre — which is indeed a sprawling, decentralised centre absent an clearly delineated town square, statue or roundabout (or as usually, all three together) to indicate you are actually downtown — a typical feature of Riau Islands.¹⁵⁹.

The conversation naturally flowed into telling mutual life stories and he seemed well-seasoned on communicating his part, most likely because of the same topic coming up with every new customer that he picks up. That was quite apparent,

158 Appendix N for photos from a pangkalan Gojek Armin helped me break into, where he also ran into a childhood friend who is a fellow pengojek. The Gojek drivers were more than open to talk about the details of their job and noticeably proud of their green helmets and jackets, which gave them a vivid sense of belonging to a certain imagined community.

159 At the restoran, Armin took up the rather proud role of the host, explaining the unique way Masakan Padang works, where a manageable portion of each dish the restoran cooks that particular day comes to the table, and you only pay at the end for only the ones you have touched.

as he did not have to dig too deep into his memory to remember every twist and turn his journey took since his merantau began in 1988. In a quite coherent fashion, he laid it out step by step, almost in perfect tune with the small dishes that kept coming to the table one by one. Armin graduated from high school in 1988 at a village called Danau Maninjau, not too far from Padang, the capital of West Sumatra province, at the age of 19. Immediately after, he went on merantau, like every one of his friends in his cohort, albeit all in completely different directions.

As I inquired more and more on this topic in our conversations, which occasionally spilled over to Whatsapp as well, he recalled many perantau friends who went as far as Russia and Korea, most of whom he is still in touch over social media. His first destination was Kuala Lumpur, Malaysia. There, he worked at his uncle's (also a perantau) Restoran Masakan Padang for two years. Hearing of an opportunity to work at the construction of the Jurong Port in Singapore from a friend, he moved onto Singapore in early 1990 for six months. As the construction of the port finished off, he then moved back to Indonesia, only this time to the boom town of the early 1990s, Batam. The conversation got occasionally disrupted as he noticed my clear fascination with the Padang cuisine at certain moments. In one of such pauses, he claimed there is Masakan Padang even on the moon. I had to make sure I understood him correctly with

the assistance of my smartphone's translator application, as I was wondering if he actually said "month" or "the moon".¹⁶⁰

Seeing my hesitant confusion, he proceeded to explain: "There is no place perantau will not go in the world, or actually in the whole universe... and when they go, they will only eat their own food, masakan padang... others eat masakan padang but Minangkabau only eat their own. So, in every location there is a perantau, there will be masakan padang... therefore you will find masakan padang even on the moon".

When Armin first moved to the province of Kepulauan Riau, he became a pengojek for two months, using the ojek of his Batam-based uncle (another perantau). I encountered many pengojek across both Riau and Java who genuinely perceived their time on the bike as a buffer era between two "real jobs", usually taking up the ojek gig when they arrive at a new setting. Not too long after, Armin took up a welding job at a subcontractor of the American oil refinery PT Ingram. PT Ingram was founded in 1971 by an American businessman called Stephen Roszel, who had considerable political clout in Indonesia. The refinery was of strategic importance to the fledgling New Order government, as part of their rather haphazardly implemented policies of replacing or at least levelling the importance of Singapore in the region¹⁶¹. PT

160 "Bulan" means both month and moon in Bahasa Indonesia.

161 Smith, Shannon L. "Developing Batam.", Australian National University, 1996.

Ingram's development linked a rather off-the-map island¹⁶² (one that did not have a natural harbour) into lucrative streams of global trade, incentivised by the island's rich oil resources, and critical geographical location (or quite simply its proximity to Singapore)¹⁶³.

As the oil boom of late 1980s waned off in 1992, Armin found a similar welding job at one of President Habibie's signature "high-tech, high value-added" projects — the new international port in Northeastern Batam¹⁶⁴ — once again built to "replace Singapore" (only this time less publicly vocalised in a politically correct fashion). After working at the port construction for over a year, Armin moved onto Bintan in 1993 and started trading electronics goods between Singapore (which had already become a robust technology hub) and Padang — utilising his network at both flanks of his merantau journey. He explained how he made good money in this business but decided not to pursue it more than a year or so, as he claimed "...money is like fire, easy come easy go..." — demonstrating the metaphor by picking up his smartphone and pretending to drop it as if it burnt his hand. Deciding to go back to construction instead of trading, this time he became a foreman at the construction of the Hotel Lagoi Resort in northern Bintan, during the island's fledgling tourism and resort

162 It would not be a far-fetched analogy to call Roszel "Batam's Sir Raffles". The island of Batam still had as little as a few thousand inhabitants till the 1970s, since then its population grew to more than a million in a highly urbanised fashion.

163 Malley, Michael Sean. "Resource distribution, state coherence, and political centralization in Indonesia, 1950-1997." University of Wisconsin-Madison, 1999.

164 Appendix O for photos of Armin shared from his time at the port construction, taken with friends who are also mostly perantau.

construction boom — a rapid economic growth era that was induced by the liberalisation of foreign direct investment (FDI) into the island through the implementation of the “SIJORI” free-trade agreement with Malaysia and Singapore (Hutchinson and Chong, 2016).

Armin has been living in Bintan ever since, even as the 1998 crisis brought the construction sector (and the general investment flows into the FDI dependent island) to a complete halt for many years. He became a driver, both with ojek and taxis, depending on the day of the week and the season of the year (apparently in the rainy months of November and December seasons tourists opt not to visit). Alluringly, the crisis hit exactly a decade after his merantau began and it would be of adat (and in this case of economic convenience) for him to return to his home village. He probably did not do so as he got married to a local girl in Bintan¹⁶⁵, settling for good in an island where he would go onto build a family of six. Armin, therefore, now became a perpetual perantau, who took up a driving gig that has so far lasted for more than 20 years¹⁶⁶. Armin’s story resembles more of a semi-circle, with both ends beginning and ending in different locations of Indonesia, rather than the full form of a circular migration that is of adat, in which a perantau ends his journey where he started it.

The Indo-Malay archipelago curves up in-between the two ends of the circle, beaming through his relatively brief experiences in Malaysia and Singapore and

165 Apparently his family back home was not too amused he choose not to marry a non-Minangkabau and that was probably a side reason he never really considered to go back.

166 Appendix O for Armin at his first years driving for Indorent, the car rental company he still works with.

his long tenure in the Riau Islands. Surfing through the highly volatile economic waves of the contemporary Indonesian economy with fascinating agility and adaptiveness, Armin's reflexes to the boom and bust cycles demonstrate the nature of the mainstream prevalence of precarity in Indonesia — a phenomenon that is well embedded into their vision and expectations of life since their upbringing. What is the future of work in the North therefore, is the historically well established reality of the perantau of the South.

VI) Gojek Drivers: The Contemporary Working Class of Indonesia

'Gig economy' is the most common name to refer to a new form of online platform oriented capitalism, as it was coined during the peak of the Global Economic Crisis of 2008 in order to describe the rise of piecemeal, part time and freelance work among the Western middle and low-income classes. It has since become associated with digital labour (Stone, 2017), mostly due to the rise of smartphone-based platforms such as Uber, Grab and Gojek. Shifting from a 'stable' job to a 'gig' job was indeed initially discussed as an opportunity or 'freedom of personal schedule' during the early 2010s (Stephany, 2015).

Such optimistic discourse rapidly faded and gave way to a robust set of research and popular discussions that accept the premise of 'gig jobs' overwhelmingly result in workers simply working much more for much less (Kessler, 2018). A 'gig worker' tends to have much significantly less job related rights (annual

leave, pension etc.), less allowance to unionize or form cooperatives and in general have much less job security than his or her peers with formal labour contracts.

Another key downside of becoming a ‘gig’ worker is that it tends to reduce the prospects of such individuals in their future career, creating a stigma around them as nugatory. This locks them in a perpetual ‘gig’ — disabling many such workers to shift back to the formal sector. As such, in developed economies such as the US, Singapore, Australia and Western Europe the platform business model of ride-hailing and urban deliveries tend to catalyse the informalisation of formal labour markets¹⁶⁷.

It is noticeable that the post-WWII era saw each generation find a new term that captures its own ‘zeitgeist’ and use this term to address ‘the urban poor’ or ‘low-paid, insecure labour’. In the 1960s, publications concerning Latin America popularized the term marginality (Germani and Silvert, 1961), which was followed by the proliferation of the term informality from scholarship

167 In Singapore for example, there are multiple reports of Grab drivers having to put up a significantly uphill battle to convince formal employers that their time driving for Grab ‘was not all waste’: “Two years ago, Grab driver Muhammad Syahmi joined a ride-hailing industry brimming with rosy prospects. Buoyed by generous incentives dished out by firms, drivers cashed in on the lucrative business, where earning a decent wage was a relative breeze. “It was ... easy money (then)” said Mr Syahmi, 25. For many drivers like him, however, the tide has since turned: Dogged by meagre incentives and fares in recent months, those bolting for the exit have found themselves in a quandary, as they struggle to land jobs after years in the driver’s seat. And they cannot say they had not been warned. It was not too long ago that observers and experts cautioned that providing a private-hire car service could harm drivers’ job prospects. It did not add to their resumes and offered little in the way of skills-building, they had said”. — Cheng, Kenneth. “The Big Read: Private-hire drivers face roadblocks as they seek way out of once-lucrative industry”. 4 September 2018. — <https://www.channelnewsasia.com/news/singapore/private-hire-drivers-face-roadblocks-reskilling-retraining-jobs-10678820>

concerning Africa in the 1970s (Hart, 1973). The term social exclusion was then popularized from the 1980s onwards, often in tandem with 'urbanisation' in metropolises (Munck, 2005).

Throughout the last decade, the term precariat has captured the bulk of the discourse in global labour studies which attempt to theorize the gig economy. Guy Standing's provocative and politically charged publications, *The Precariat: The New Dangerous Class* (2011) and *A Precariat Charter: From Denizens to Citizens* (2014) have been undeniably the major influence in the emergence of a widespread literature concerning the growing precarious proletariat around the world. The term the Precariat finds its origins in the 19th Century Britain. It has crept back into popular usage in the last 20 years among the protesting youth in Italy and anime magazines of Japan after a century-long hibernation.

Standing and his subscribers argue that the nature of labour is becoming more precarious by the day, resulting in a growing mass of a 'dangerous class' (Chomsky, 2012; Hua and Ray 2017; Pye, 2017). Standing contributes to global labour studies literature as he coins terms such as 'tertiary time'¹⁶⁸ and a 'precaritized mind'. The precariat operates in endemic uncertainty, within tertiary time and a precaritized mind as "stillness is endangered, connectivity fills every space and time" (Standing, 2011) as to be street-smart is a feature of being part of the precariat (Bauman, 2007; Castells, 1996; Standing, 2011; Qiu,

168 Referring to those work in the service sector within a notion of temporality that resembles Taylorist manufacturing labour.

2016). A key point Standing makes is that precarity increases work-for-labour, as workers are increasingly pushed to:

- Socially network to find a form of employment
- Follow training and buy gadgets for labour
- Search for clients through the city traffic
- Bargain to get a job/gig/ride
- Put extra emotional effort to keep customers happy/get higher ratings

An underlying assumption in the body of literature which subscribe to Standing is that workers are forcefully pushed into entrepreneurialism against their own agency and will, as flexible schedules is solely for the benefit of ‘capital’. Long-term, stable, fixed hour, fixed location jobs are proper and more desirable than gig jobs — flexible labour equals precarity (Standing, 2011; Chomsky, 2012; Hua and Ray, 2017). A key pitfall of this dichotomy of ‘proper versus desirable’ jobs is the dichotomy itself. In Southern contexts in particular, workers cannot be neatly classified into being ‘formal ’or ‘informal’, as one can be formal by day and informal by night. Work can be taken up by an individual at a given time could depend on the season, macroeconomic trends, or even the weather (Simone, 2004; Cramb and McCarthy, 2016; Kusno, 2017; Malasan, 2017). Also, it is important note that flexible jobs generate flexible forms of collective action and social networking. Formal unionization is not the norm in Indonesia, work benefits and labour market security have been often negotiated through NGOs that organize workers informally (Ford, 2009; Pye, 2017). Not all Indonesian workers necessarily desire office jobs, a condition the Northern

labour studies imply to be the norm, as white collar jobs with set schedules may bar workers from attending their religious ceremonies (as in the case of the Balinese) or disable them from moving around the archipelago throughout different seasons (as in the case of the perantau).

The precariat is also illustrated to lack a clear focal address, entity and common identity to be able to organise (Standing, 2011). According to Standing (2011) the precariat do not have access to social capital, means of income pooling, networking and collaboration between relevant actors within a form of labour. Precarious workers are portrayed to have no time for leisure, idleness, socialization and develop minimal camaraderie, appreciation of reciprocity, exhibit no guild-like rules of self-regulation and do not foster empathy towards each other.

Ford and Honan (2019) however, through their comprehensive fieldwork across the Indonesian archipelago with Grab and Gojek drivers, accounting for the ways in which the proliferation of app-based transport in Indonesia has catalysed intense collective engagement among motorcycle taxi drivers. The reality on the ground dismays the theoretical fears of scholars of the North who contend that the rise of the gig economy would completely atomize, fragment and deformatize the workforce (Scholz and Schneider, 2017), and by extension threaten the notion of unionization itself (De Stefano, 2016). Gojek drivers' fuzzy legal status result for them to operate largely outside the parameters of the formal industrial relations system while not barring them from organising in

notable numbers, in stark contrast to a decrease in union membership popularity in formal sector occupations of Indonesia (Ford and Honan, 2019).

This chapter thus aligns itself with many other scholars of the Global South (Sardar, 2013; Munck, 2015; Braga, 2016, Harris and Scully, 2015; Yasih, 2017; Lee, 2019; Ford and Honan, 2019) as the publications of Guy Standing within the last decade can be read more accurately within a context of ‘Northwest European Studies’, given his work draw from the experiences within that particular region¹⁶⁹. Standing’s grand framework of positioning platforms as the key actors that catalyze a complete loss of agency for workers tend to obscure the legacy and contemporary nature of precarious labour in the Global South. What is described as the precariat, thus, is a long-prevalent phenomenon in the Global South. As much as there is a convergence of precarity between the North and the South, the North has better conditions nevertheless, given its much more secure starting point in terms of labour conditions (Sardar, 2013; Munck, 2015; Braga, 2016, Harris and Scully, 2015; Qiu, 2016; Yasih, 2017; Lee, 2019).

169 “What is disciplinary knowledge other than area studies of the metropolis? The canonical figures of modern sociology – to take just one example – Max Weber and Émile Durkheim, were writing from and about their home countries, Germany and France, respectively. Why is their work considered foundational of a discipline instead of being seen as (merely) area studies? Their disciples’ ability to claim that Weber’s and Durkheim’s findings are universal cannot be separated from the power differentials that divide and create Global North and South. The global distribution of power/knowledge is what makes some national understandings universal – worthy of disciplinary status – while relegating others to parochial modifications, or worse, aberrations from the norm...some kinds of regional knowledge are privileged over others, a structural hierarchy that originates in the spatial origins of each knowledge formation.” (Abraham, 2020)

The overall perspective in this chapter aims to side-step the common privilege of phenomena arising within the Global North to set the universal discourse in science & technology studies (Rafael, 2019). Indeed, the two hemispheres have rather inverse trajectories in regard to their overall quality of labour conditions, despite emerging ‘platform economy’ business models being predominantly portrayed as vectors of gloom and doom within contemporary labour studies literature (Scholz, 2017; Srnicek, 2017). As illustrated by providing everyday examples of practicality and nuances within power relations among employers and employees, digital platforms do not necessarily disenfranchise the average worker in a wider set of contexts across the world.

A significant share of contemporary labour literature is dedicated to discuss how and why gig economy platforms such as Uber or Gojek can act the way they do against their workers (providing little protection, low pay and allowing low representation). Most academics offer more regulation as a solution to mitigate this power imbalance (Choudhary, 2020) or have a nostalgic approach towards the proverbial ‘good old times’ of the Western welfare states of the 1970s (Standing, 2011) — while leaving out the historical trajectory how such state wealth was accumulated to be able to fund such generous provisions from their narratives. Applying 19th and 20th Century frameworks such as Marxist Theory to 21st Century digital networks (Scholz, 2017; Srnicek, 2017) do not fare well in dealing with the root cause of the unfair labour conditions and is rather anachronistic.

The financial trail of how these firms are funded on the global capital markets, a vital aspect of the root cause of the issue, is more often than not left out of the discussion¹⁷⁰. As detailed in the previous chapter, the pressing issue can be traced back to how Northern central banks in Japan, the United States and the European Union allow unfettered amounts of credit to bail out their corporations, who can in turn, push these funds into the labour markets of the South from the deep capital markets of the North. Corporations such as Gojek are kept unprofitable¹⁷¹ by their venture capitalist funders to ensure an exponential trajectory of growth. If this macro trend continues, there is little

170 A recent exception is the detailed account of driver mobilization by Nastiti (2017): “...thanks to venture capital investments, Go-jek can vastly deploy resources, pursuing aggressive marketing to attract consumers. Go-jek engages in a fierce price wars with its competitors, Grab and Uber. These ride-hailing firms, all endowed through financial investments, are able to subsidize costs and offer a much lower price than traditional ojek. Besides financial incentives, Gojek uses rhetoric of “the revolutionary creation of the nation’s child” [revolusi karya anak bangsa]. The firm is also well-known for running ad campaigns with appeal to emotions. Ads narrate that Gojek gives drivers the opportunity “for unemployed people to make a decent living” and “to pay tuition fees for [their] kids,” or for “a single mother to be independent... The emergence of Go-jek fits the government’s vision to be the largest digital economy in Southeast Asia. Go-jek’s founder was invited to escort the President on a visit to Silicon Valley in October 2015. This visit, and several follow-up meetings with the Minister of IT, brought an agenda of attracting giant tech investors to “the national movement of 1000 digital start-ups.”

171 “It all starts with an idea, a new app, a new platform. A disruptive idea that will for sure turn this industry upside down. So the founder manages to get the startup going but they run into a problem. Their revolutionary idea needs a lot more up-front capital to get to the next stage. Luckily, that’s where the Venture Capital firms come in.... You are what amounts to a fund manager who knows a lot of rich people. In exchange for a fee, Investors hand the VC firm money to be locked up in a fund for 10 years or more... The founders take the millions you gave them and shove it into things like Facebook ads, Instagram ads, YouTube ads, Amazon services. Basically, you want them to do whatever it takes to “grow” on paper. VC firms tell startups to not run at a profit. Running out of money!... doesn’t matter if it’s sustainable, you’ve been told to grow. Run out of money... The only reason this whole thing worked is because of the same reason why any ponzi scheme works: the money kept coming in.” — Chamath Palihapitiya on rebuilding Social Capital & Silicon Valley ponzi scheme [Video file]. (2018, October 12). <https://www.youtube.com/watch?v=RwRZtZQoLtQ&feature=youtu.be>.

incentive nor any sustainable deterrent for corporations to not treat their workers as expendable agents and fungible cogs within a technological assemblage.

The precarity and fungibility of digital labour, with no little credit due to provocative scholars such as Standing, has now become the central focus of labour studies, as recent publications attempt to both analyze the present from a comparative standpoint and formulate the foreseeable nature of labour relations in the 21st Century (it is important to note that digital labour is never wholly digital, there is a significant amount of hardware and materiality that enables it to exist — in the case of Gojek, the motorcycle, helmet and smartphone).

The concept of 'the precariat', is one of the latest milestones in the global quest to further comprehend and illustrate the realities of digital labour. What separates the contemporary discussion from its predecessors is the growing realization that the Southern working class does not (and most likely will not) resemble the working class of the North. The idea that the labour relations within 'latecomer nations' will follow in the footsteps of the frontrunners of industrialization, now has little currency as many scholars recognize that the North is more likely to follow the South than the other way around.

Building on this fundamental recognition that has pulled labour literature beyond its outdated (often nostalgic and Eurocentric) focus on organised, unionized, formally employed workers in the North, this chapter contends that the emergence of platform capitalism in the larger portion of the world (the South) precipitates significant forms of emancipation, generating an opposite

trend to the precariatization that it catalyzes in the North¹⁷². Beyond their Eurocentric approach — which inevitably results in pitfalls in regard to the universality of the problems that are dwelled upon and feasibility of solutions that have been proposed — Standing's publications has its rewarding merits. 'The Precariat' (2011) formulates the seven features of precarious work (employment security, job security, labour market security, representation security, work security, skill reproduction security and income security) which can serve as a template to structure the implications of platform capitalism. Gojek drivers of Indonesia could simply be observed as the 'rakyat¹⁷³', a working class people who are not necessarily disenfranchised through their labour, as the conceptualisation of the 'precariat' assumes.

VI) Gojek as Urban Infrastructure in Indonesia during COVID-19

As a fresh illustration of how critical the presence of Gojek's labour force has become across urban Indonesia, this chapter concludes by observing the role the platform has played during the COVID-19 pandemic. It cannot be underestimated how the pandemic has gutted mobility options across Indonesia

172 "While indeed much in the criticism of area studies as contrived geographical and cultural conceptions is warranted, what critics often forget is that the area studies map of the Cold War has been adopted throughout much of the world. Hence, as much as a territorially bounded concept of the region can be theoretically deconstructed, there is a lived reality to this constructed geography." (Goh 2012)

173 "People" in Bahasa Indonesia, often used the context of the working class.

due to many waves of strict lockdowns policies suspending any form of public transport for months¹⁷⁴. During the height of the crisis, Indonesian businesses retrenched more than 3 million workers. Formal data was available for only 1.7 million of those retrenched workers, out of which 68% were men and 32% were women, with the highest number of job cuts occurring in Jakarta, West Java, and Central Java. The Indonesia Chamber of Commerce estimates retrenchments could reach 15 million across all sectors¹⁷⁵.

Indeed, as of the time of writing, it is unlikely the same exact demand for public transportation will return anytime soon, even though economies have begun to partially open up. Office commutes are down from their pre-pandemic levels with a sticky manner as many companies have adopted work-from-home setups and a significant number of those who work in offices have resorted to taking their own cars or motorcycles to work. Safety protocols have also limited the

174 "...city-owned bus operator recorded an average of 550,000 passengers per day, down from around 840,000 in January. The company had broken its own record of achieving 1 million passenger per day in February. In the first half of April after the COVID-19 outbreak hit the capital, the number fell further to only 83,000 per day. The decline in passengers also occurred on the Commuter Line service provided by state-owned railway operator PT Kereta Api Indonesia (KAI), where only around 183,000 passengers per day were recorded in April, down from 598,000 passengers per day in March and 859,000 in January. City-owned MRT Jakarta also suffered a similar problem as the country's first subway service recorded around 5,000 passengers per day in April, down dramatically from around 45,000 passengers per day in March and 85,000 in January." — The Jakarta Post. "Public transportation use in Greater Jakarta plummets during COVID-19 pandemic: BPTJ", 20 April 2020: <https://www.thejakartapost.com/news/2020/04/20/public-transportation-use-in-greater-jakarta-plummets-during-covid-19-pandemic-bptj.html>.

175 The Asean Review (2020). ASEAN Rapid Assessment: The Impact of COVID-19 on Livelihoods across ASEAN. ASEAN Rapid Assessment. Retrieved November, 2020, from https://asean.org/storage/ASEAN-Rapid-Assessment_Final-23112020.pdf

number of people a public vehicle can carry¹⁷⁶. Such crises are essentially shock-tests of systems, exposing which components of a given infrastructure is able to survive in times of high volatility and uncertainty (Elyachar, 2010).

The COVID-19 pandemic in Indonesia brought transportation systems to a halt across the board as airports, public transport, ferries went silent with the exception of Gojek. This unprecedented outbreak across the archipelago became an exposition of how profoundly Gojek is an indispensable platform in the lack of capable urban infrastructures — a long way from being a modest call-centre which dispatched a handful of motorcycle taxis in 2010. 'Everyone' was subtracted from the streets with lockdowns across Java Island and only Gojek drivers remained 'at work'. This was perhaps the most vivid demonstration of mobile technologies' vital role within the urban circulations of contemporary Indonesia.

The mainstream presence of Gojek as a delivery platform enabled middle-class Jakarta residents to access food, groceries, and other fundamental needs from the comfort of their homes, instead of having the only option of lining up in front of stores, as observed in other contexts that were affected by the pandemic. Indeed, in a relevant study conducted in April and May 2020 to which investigates how the pandemic affected the usage of various apps and

176 The Jakarta Post. "Commuters Return to Public Transport with More Protective Gear," June 9, 2020. <https://www.thejakartapost.com/news/2020/06/09/commuters-return-to-public-transport-with-more-protective-gear.html>.

services, Gojek's food delivery application GoFood was ranked top due to the wide array of options it provided within urban areas¹⁷⁷.

Such wide optionality of services for Gojek's urban user base is essentially provided by the incessant toil and medically risky efforts of millions of pengojek¹⁷⁸. Gojek drivers are taking undeniable degrees of risks of viral infection as they keep on shuttling between merchants and restaurants, enabling these entities to keep their businesses running and consumers to stay at home for necessities. In such context, as a remnant of the reciprocity within popular economies, urban populations have made it a duty to support their newly realized hero figures during the pandemic by giving extra tips, medical supplies and moral care to motorcycle taxi drivers¹⁷⁹ even though they only encounter each other within a fleeting moment arranged by algorithms. A study by the Universitas Indonesia School of Economics and Business Demographics

177 "GoFood Bags Tops UX and CX Global Rankings for Making Lives Easier during COVID-19." GoFood bags tops UX and CX global rankings for making lives easier during COVID-19 Gojek Updates, October 27, 2020. <https://ms.thejakartapost.com/Gojek-2019/2020/10/14/gofood-bags-tops-ux-and-cx-global-rankings-for-making-lives-easier-during-covid-19/>

178 "Gojek is the biggest ride-hailing company in Southeast Asia with 40 percent of the market. In Indonesia, Gojek drivers form 1.5 percent of the workforce" — Savirani, Amalinda, and Wening Mustika. "My Kids Need Me, but We Need Money Too : Female Gojek Drivers in Indonesia." Melbourne Asia Review, October 25, 2020. <https://melbourneasiareview.edu.au/my-kids-need-me-but-we-need-money-too-female-Gojek-drivers-in-indonesia/>

179 "...Many Indonesians have also been doing good deeds for the drivers. Wulandari, notes, "I used to give IDR 5,000 tips for drivers, but now I give at least IDR 50,000 (\$3) each... I (also) ordered food for the drivers and gave them masks and hand sanitizers to protect them from coronavirus." — Hung, Jason. "Delivery People Are Risking Their Lives to Keep Asia Running. Here's What People Are Doing to Say Thank You." —The Diplomat, April 1, 2020. <https://thediplomat.com/2020/04/delivery-people-are-risking-their-lives-to-keep-asia-running-heres-what-people-are-doing-to-say-thank-you/>

Studies Center, found that more than 60% of Gojek consumers have given some form of social assistance to its partners during the pandemic.

Urban populations made use of the features of the Gojek application for digital forms of gifting while often adding extra food orders for drivers (as in the case of 24% of consumers). Many others (16% of consumers) have also used the ‘treat your driver’ option to simply buy meals for driver partners without ordering any for themselves¹⁸⁰. The rapid manner in which such of collaborative lines formed between Gojek consumers and drivers can read as an exhibition of the tradition of ‘gotong royong’¹⁸¹ within the popular economies of Indonesia (Wima, 2019). Besides the bond of consumers and drivers, Gojek drivers have also been reported to be teaming up the Jakarta police to curb health protocol violations across Indonesia's capital as some 8,000 drivers took part of the ‘COVID-19 hunter’ team to crack down on lockdown and social distancing violations¹⁸².

It is often noted in contemporary labour literature that human bonds between everyday workers and their clients have been commodified and has become not as long-standing and personal as in the ‘pre-digital’ era, where every family,

180 “Gojek Helps Millions of Local Entrepreneurs Digitize in Fight for Survival amid Pandemic.” The Jakarta Post, August 5, 2020. <https://www.thejakartapost.com/adv-longform/2020/08/05/Gojek-helps-millions-of-local-entrepreneurs-digitize-in-fight-for-survival-amid-pandemic.html>

181 The notion of cooperation by members of a community to achieve a common goal in Bahasa Indonesia.

182 “Police Engage App- Based Drivers to Enforce Health Rules,” December 20, 2020. <https://www.thejakartapost.com/paper/2020/12/18/police-engage-app-based-drivers-to-enforce-health-rules.html>.

street and neighbourhood would have its own delivery workers (Turner and Schoenberger, 2011). Nevertheless, the COVID-19 crisis has exposed the profound level of mutual dependence within the seemingly ‘impersonal’ algorithmic era of Gojek in urban Indonesia.

It is not often that trends in developing economies shed light on trends in the developed ones, often the temptation is to assume ‘anything new’ will trickle down from the latter to the former. This chapter has aimed to reverse such historic privilege of more developed countries to set the terms of understanding the less developed ones (Rafael, 2019) — an approach especially observable in the field of Science and Technology Studies. As mentioned in earlier chapters, framing platform economies across Southeast Asia not as derivatives of a Western technological norm, but quite inversely, novel assemblages in their own right is a key objective of this research.

Informalisation of labour conditions is often discussed as a ‘new’ phenomenon in Western-oriented debates due to popular discussions of highly profile archetypes such as Uber (Stone, 2017; Rosenblat, 2018) and the emergence of ‘gig’ economy (Stephany, 2015; Kessler, 2018), a term which was coined at the height of the financial crisis during late 2008¹⁸³, referring to working several part-time jobs or ‘gigs’, often related to internet based platforms.

183 Dr. Lawrence Lessig popularised the term during 2008 in the West, which until then was more associated with the jazz industry.

Debates regarding the ‘informal economy’ in the Global South however, date much earlier on, as the term itself can be traced back to the International Labour Organisation’s post-World War II agenda to create a globally accepted and operational concept of under-employment in the Third World (Benanav, 2019). Observing beyond the overall morbid outlook for urban circulations in Indonesia during the ongoing pandemic, it can be concluded that the anti-fragile (Taleb, 2012) and virtuous webs of popular economies have proven themselves to be key for urban Indonesians to survive perpetual lockdowns.

Enhancing the intricate webs of vital human interactions during this unprecedented time, the platform has further solidified itself as an integral component of Indonesia’s digital urban infrastructure. Gojek can be ideally construed as a technological assemblage which not only translates the financial transactions and labour arrangements within popular economies onto a digital realm, but also such economies’ fundamental anti-fragile nature that gains from such eras of chaos and uncertainty¹⁸⁴.

The next chapter delves into the third and final main component of the assemblage that is the Gojek platform: the city. Contending the observational theory that the urban demarcations of Indonesian settings are most accurately defined through the presence of Gojek drivers, the chapter brings together the

184 “No technologies of note, came from design and planning — they are just Black Swans. The strategy for the discoverers and entrepreneurs is to rely less on top-down planning and focus on maximum tinkering and recognizing opportunities when they present themselves...the reason free markets work is because they allow to be lucky thanks to aggressive trial and error, not by giving rewards or incentives for skill. The strategy is, then, to tinker as much as possible and try to collect as many Black Swan opportunities as you can (Taleb, 2012)”.

financial and labour related aspects of Gojek with relevant discussions within urbanism literature.

Framing the platform's inherently fluid operational radius as a dynamic frontier for the contemporary Indonesian city, this chapter aims to rethink the Jabodetabek region within a digital framework, as a boundary is essentially a notional line regarding who and what it separates, connects, and makes legible (Sarma and Goswami, 2015). Java is made up of overlapping neighbouring cities, in the west, Jakarta and its metro area merge, transforming the Indonesian capital into a megacity, known locally as Jabodetabek (an acronym of the towns of Jakarta, Bogor, Depok, Tangerang, and Bekasi). For a map of the region, refer to Appendix R.

Chapter 4: I. Gojek as Digital Delineation of the Indonesian City: Seeing as a Platform in Urban Space

a) Introduction

Urban studies literature has been long referring to the city, a site of layers upon layers of infrastructure (Anand, 2015), as a discernible space of intense human circulations and commercial exchange (Elyachar, 2010; Simone, 2010; Larkin, 2013; Sopranzetti, 2017; Garcia, 2018). Infrastructures are shared circulations. They tend to be consciously maintained yet collectively improvised, often visible yet inevitably ephemeral in their exact boundaries. As convenient as this definition may be though, it remains to be an abstract one.

Where and when exactly do these circulations take place in the context of a contemporary city? What exactly is being exchanged and how? How do these circulations expand and shrink according to supply and demand for certain goods and services — and how do such swellings and contractions define the boundaries of the city? What form of infrastructure and medium of exchange best represent where the city is lived? As daily activities of everyday people are integral to the ways in which infrastructures are built and operated (Krichker and Sarma, 2019), an everyday application such as Gojek is deemed apt to answer such inquiries.

Framing Gojek's inherently fluid operational radius as a dynamic frontier for the contemporary Indonesian city, this chapter aims to delineate the boundaries of urban activity in higher fidelity and resolution. It aims to rethink the Jabotodabek region within a digital framework, building on the premise that a boundary is essentially a notional line, which invites discussion as to what it separates, connects, and makes legible (Sarma and Goswami, 2015).

As the platform intermediates countless circulations within Indonesian urban space and renders its users' transactions formal, traceable and granularly legible within a digital realm and its presence inevitably defines where urban commerce takes place. This chapter takes a closer look into Jakarta, a layered landscape of inhabitants and materials, a city of cities (Martinez and Masron, 2020) — observing Gojek's digital platform's profound ability to centralise commercial flows across the archipelago.

The platform can be construed as the most apparent form of infrastructure that formulates urban frontiers across Indonesia. This chapter aims to illustrate that the most reliable indication of being in (or out) of the city is the presence or cessation of the circulation of Gojek drivers in a particular area. The practical implication is that, if someone in within the Indonesian archipelago launches the Gojek application and finds a ride available, she could be considered to be in an urban zone.

II) The Indonesian city

The ways in which urban infrastructures have been influenced by the transformations of societies have long fascinated scholars of the Global South (Ford, 1993; Luthra, 2015; Doron and Jeffrey 2018; Nguyen, 2019; Chan, 2020). Cities are, at their core, complex human institutions (Elliot and McCrone, 1982). According to Cansever (1996) the creation of cities is the most salient product made by human beings to surround, arrange, and direct their lives, as Montgomery (1998) noted “...city is a phenomenon of structured chaos”. Infrastructures are mediums which formulate such chaos into everyday interactions, they are the skeleton upon which everything else is formed upon. Jacobs (1961) saw the city as a vessel of human interactions, not simply a skyline or mass of buildings, but rather a spontaneous dance – citing her observations of the flow of information and ideas within small towns in North America. In the Southeast Asian context, Ford (1993) offers a morphological model to delineating how cities evolve, taking Jakarta as an archetype — as what became the structural norms urban Jakarta appeared later in all coastal cities of Indonesia.

Throughout the 1700s, the major urban centres of Jakarta, Semarang, and Surabaya emerged with core areas modelled after Dutch port cities: canals, city walls, cathedrals, and townhouses. In-land towns which were built around river

transportation rather than overseas trade, such as Bogor and Bandung¹⁸⁵, were designed as highland resorts with large estates, gardens and agricultural service centers. As such, the Dutch imposed their ideal landscapes on an alien archipelago. These exotic aesthetic features quickly led to structural issues as these cities grew in population: the canals of Jakarta quickly became clogged, sluggish, malaria-infested pool rather than the open spaces which the Dutch envisioned them to be¹⁸⁶ and the city became infamous for its rich variety of diseases.

Since the 19th Century, Jakarta consisted of long strips of road, seldom more than a kilometre wide. By the mid 1800s, the city had a population of 70,000 and had the overall shape of a barbell, with the seaport to the north and the core residential area to the south. The strip connecting those nodes became gradually

185 “Ginsburg et al. (1991) explained that the large cities in the monsoon countries, which formed through regional-based suburbanization processes in East Asia and Southeast Asia, were mostly located in wet-rice production areas. Wet rice farming requires a substantial number of laborers; thus, these areas tended to have high population densities that were comparable in density to cities in pre-industrial Europe. Labor needs in rice farming fluctuated during the cultivation period. The high- density agricultural regions in the east, southeast, and south Asia were mainly situated in the wet climate area known as Monsoon Asia. Today, this world’s “rice granary” covers about 10% of the world’s land but accommodates 53% of the world’s population and provides almost 90% of the world’s rice production (Kyuma, 2009). The high population density in these regions encourages farmers to engage in a variety of non-agricultural activities such as trade, small-scale rural industries (McGee, 1991), and construction (Pribadi et al., 2017)”. — Rustiadi, Ernan, Andrea Emma Pravitasari, Yudi Setiawan, Setyardi Pratika Mulya, Didit Okta Pribadi, and Narumasa Tsutsumida. “Impact of Continuous Jakarta Megacity Urban Expansion on the Formation of the Jakarta-Bandung Conurbation over the Rice Farm Regions.” *Cities* 111 (2021): 103000. <https://doi.org/10.1016/j.cities.2020.103000>

186 “The Dutch controlled the cities, but few Dutch lived in them. In 1673, only 2,000 of the 27,000 people who lived in Jakarta were classified as European, and many of them were probably Eurasians (Abeyasekere 1987). The commercial and industrial activities that supported the cities were soon dominated by Chinese immigrants, because indigenous populations were considered unskilled in trade and perhaps too hostile to be allowed to occupy central locations.” — Ford, Larry R. “A Model of Indonesian City Structure.” *Geographical Review* 83, no. 4 (1993): 374. <https://doi.org/10.2307/215821>.

enlarged as Javanese kampungs grew within it (Ford, 1993). This barbell-infill pattern became a typical morphology of Indonesian port cities ever since — indeed TransJakarta¹⁸⁷, the contemporary spine of the city, runs through this barbell shaped core of the city.

Building on this legacy, the infrastructural foundations of contemporary Jakarta were laid down between 1950 and 1965, symbolising the emergence of a new nation under Indonesia's first president Sukarno. The revolutionary president envisioned monumental buildings in Jakarta as an important tool of showcasing power in a Javanese sense: stadiums, wide avenues and boulevards and vast public spaces became the *tugu*¹⁸⁸ and *istana*¹⁸⁹ of a city construed as a “beacon of emergent force” (Martinez and Masron, 2020).

Sukarno’s successor Suharto, however, had the goal to amend the present space rather than to undertake new monumental projects. Distancing the capital city from his predecessor’s legacy, Suharto's approach to Jakarta was more so aimed at minimising the opportunities of direct participation by its citizens — most

187 “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.” — Palevsky, Benjamin. “Motorcycle Taxis in Jakarta, Indonesia The Case for Recognition and Integration of Motorcycle Taxis in Jabodetabek’s Transportation System.” Penn IUR Series on Informality, November 2019.

188 Monument in Bahasa Indonesia.

189 Palace in Bahasa Indonesia.

visibly by his de-emphasis from public transportation and public spaces (Martinez and Masron, 2020). Suharto was more so focused on what Kusno (2010) describes as the “spectacle of transportation systems”. The long-term president laid down many internal toll roads, flyovers, and built Indonesia's largest seaport, Tanjung Priok, along with the Soekarno-Hatta international airport, both of which are still very much operational to this day (Martinez and Masron, 2020). Following Suharto's downfall in the late 1990s, another significant reconfiguration of urban space took place in the mid 2000s with the launch of a brand new ‘busway’ cutting through the heart of the city's business district under Governor Sutiyoso. The construction of the ‘TransJakarta’ busway symbolises, arguably, a post-authoritarian form of power in which the experience of riding a bus through the city re-enables the average citizen to participate in the very core of urban circulations (Kusno, 2010).

Along with such inescapable examples of spatial planning and visible infrastructure, network of public utilities (electricity, natural gas, water, sanitation¹⁹⁰), social housing and public education became primary municipal services of the provincial government. Observing the city as a context of

190 “In this layered context, self-help in implementing improvements at the neighbourhood level is a phenomenon which reflects the challenges authorities face in providing public goods, such as sanitation and housing. It has been argued that this practice of spatial production has allowed the cost of providing these public goods to be externalised to communities and residents in terms of resources and time to meet dominant urban imaginaries (UN HRC, 2013). Propagated by authorities, improving living conditions on their own initiative is increasingly being practised (and internalised) by marginalised residents as a way of being and belonging to the city; yet the spatial uncertainties faced by the marginalised who rely on these spaces for residing and working have not been much ameliorated (Padawangi, 2019).” — Martinez, Rafael, and Irna Nurlina Masron. “Jakarta: A City of Cities.” *Cities* 106, 2020.

coexistence of the formal and informal, there has been an emphasis of citizen participation in urban planning and budgeting¹⁹¹ as organic forms of collaboration in communities such as the urban villages (kampung) of Jakarta have been encouraged by both non-governmental and governmental efforts.

This macro shift in how the city is thought of by its planners is significant, as dichotomies in Jakarta's landscape is most apparent in the observation of up-class real estate projects coexisting with kampungs. Such dichotomies should not necessarily be read as a clash of opposing agendas or romanticised ways of imagining a multicultural¹⁹² space. Rather, what is more significant is the observation is how the people of kampung take advantage of their fluid and central location by providing labour to office buildings, restaurants, shops and residences (Martinez and Masron, 2020).

191 “There is increasing concern with whether this participatory and community-based planning is being integrated into official mainstream planning (Padawangi, 2019). Some of the major challenges for involvement in participatory budgeting include access to information to identify the needs and priorities of the community, and about the process of participatory budgeting - what happens to the proposals made by citizens, and whether they are being responded to, implemented, or can be monitored (accountability) (Feruglio & Rifai, 2017).” — Martinez, Rafael, and Irna Nurlina Masron. “Jakarta: A City of Cities.” *Cities* 106, 2020.

192 “We have been witnessing a recent (market-led) tendency to promote sub-Saharan African cities as new metropolitan models, defining them as the ‘ordinary’ and ‘global’, while many capitals of the sub-continent are also being promoted as ideal sites for planning ‘futuristic’ cities... In particular, the new urban middle class in Sub-Saharan Africa has been linked to the rapid alteration of some urban paradigms such as: inclusion, accessibility, and suburbanism (Mabin, Butcher & Bloc, 2011)...This emerging class has been conceived, measured and labelled in terms of achieving and adhering to ‘formal’ standards of living or accessing urban facilities and/services.” — Mazzolini, Anna. “The Rising ‘Floating Class’ in Sub-Saharan Africa and Its Impact on Local Governance: Insights From Mozambique.” *Governing Urban Africa*, 2016.

III) The Urban Sprawl

There have been many conceptualisations of spatial densification such as ‘desakota’¹⁹³ (McGee, 1967) and ‘kampungkota’¹⁹⁴ (Kusno, 2017), arising from the scrutiny of how the layers¹⁹⁵ within Southeast Asian cities function. Such configurations delineate the urban anthropocene by closely observing everyday infrastructures — both societal and physical — that are built by newcomers into the metropolis (Dalakoglou, 2010; Harvey, 2008). In the 18th century, a typical kota (city) on the Javanese coast consisted of a European-appearing core, adjacent to a Chinatown and surrounded by Javanese *desas* (villages)¹⁹⁶. Indonesian modernity did not only materialise in tangible forms of technology and visible physical changes to the environment, as it also manifested itself in the notion of becoming urban (Colombijn and Cote, 2014). *Desakota*, a term McGee (1967) coined to formulate the 20th Century Indonesian city¹⁹⁷, refers

193 *Desa*: Rural zone, *Kota*: City/Urban zone in Bahasa Indonesia

194 *Kampung*: Village in Bahasa Indonesia

195 “Just a few years ago, the final print-out of different projects and modern estate developments was determined by the surrounding kampungs. The print-out resulting from some of the oldest developed areas in Jakarta is the outcome of the Kampung Improvement Program (KIP), initiated more than four decades ago (Irawaty, 2018). Hence, in different parts of the city the resulting design resembled an orthogonal grid. Such design was mostly the outcome of policies which aim to improve the living conditions in kampung areas by transforming the internal road system of kampungs and connecting it to the main roads. Over the years, this spatial configuration was further shaped by a process of densification and layer addition accommodating new generations of inhabitants (Santoso, 2011).” — Martinez, Rafael, and Irna Nurlina Masron. “Jakarta: A City of Cities.” *Cities* 106 (2020): 102868.

196 “...the network of desks provided food and occasional labor for arrangement that did not last. As cities grew, dissatisfaction set among the elite. In contrast with Latin America and many other world, large Indonesian cities did not remain focused on a valued and sacred core” — Ford, Larry R. “A Model of Indonesian City Structure.” *Geographical Review* 83, no. 4, 1993.

197 “...occupying a position between the hyper-development of Singapore and the isolation of Burma, Indonesian cities provide insight into both continuity and change in the region” — Ford, Larry R. “A Model of Indonesian City Structure.” *Geographical Review* 83, no. 4 (1993): 374.

to the fusion of urban and rural interactions at the outer edges of a city. Desakota represents the process in which rural populations flow into the geographic margins of a city, fusing their own familiar forms of commercial and societal circulations into a sprawling urban zone¹⁹⁸. Modernity, as it manifested itself through urbanisation, is not a neat and monolithic process that has to be adopted or rejected in its entirety (Colombijn and Cote, 2014). Rather, it can be endorsed in some activities and rejected in others, as the lack of formal infrastructures were plugged in by innovative techniques and crafts: “...everyday practices always spill out of the tidy paths that urban institutions, planners, and builders try to draft for them” (Sopranzetti, 2017).

Ojek driving is one of such practices that spill out of tidy paths which were drawn for the Indonesian capital. The low quality and frequency of public transport, the lack of multimodal and affordable fares, and large gaps in the areas served by the rail and bus systems have made the ojek a necessary option and have consolidated motorcycle taxis into an essential mode of transport

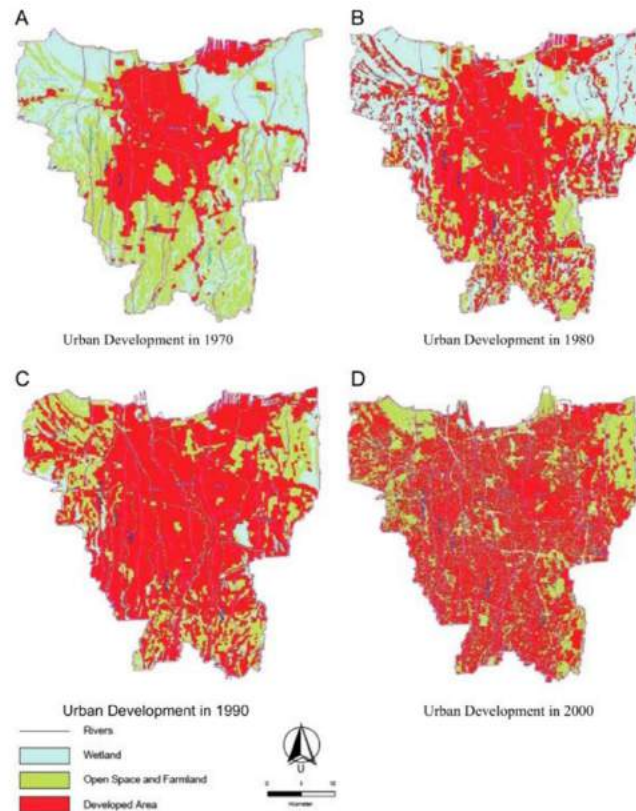
198 “According to Hudalah et al. (2013), there are three types of industrial areas in the urban fringes of Jakarta: (1) unplanned industrial areas, (2) government-supported industrial estates, and (3) private industrial estates. Unplanned industrial zones are generally dominated by labor-intensive local and home industries. Meanwhile, industrial estates, supported by the government or the private sector, are dominated by foreign and high tech industrial investors. Since the late 1990s, the growth of industrial estates has expanded beyond the current Jakarta megacity boundary (Jabodetabek) to the Serang district in the west and the Karawang regency in the east (Hudalah et al., 2013). Particularly in the east, the growth has continually extended toward the Bandung metropolitan area. Currently, there are more than 35 industrial estates occupying an area of 18,000 ha in Jakarta megacity. This number will likely increase further due to the massive inflow of FDI relocation from other countries affected by the (China Network Television [CNTV], 2012).” — Rustiadi, Ernan, Andrea Emma Pravitasari, Yudi Setiawan, Setyardi Pratika Mulya, Didit Okta Pribadi, and Narumasa Tsutsumida. “Impact of Continuous Jakarta Megacity Urban Expansion on the Formation of the Jakarta-Bandung Conurbation over the Rice Farm Regions.” *Cities* 111 (2021): 103000.

across contemporary urban Indonesia. Ojek operations have inevitably been tolerated in the archipelago despite being illegal on paper since the early 1990s, suggesting an example of neoliberalization occurring ‘from below’ (Medeiros et al., 2018). Martinez and Masron (2020) draw attention to the co-existence of varying “uses of the city in close quarters”, as the use of digital platforms and other mobile technologies people use to navigate the city make up the the modern sprawl of Jakarta. Upon its physical existence, life in Jakarta is indeed enabled by such essential innovations of urban mobility, weaving together ‘the city’ one journey at a time.

Conceptualisations such as *desakota* which observe the city as two distinct parts — the core and the margins — have been widely prevalent in discerning many other urban contexts across the globe with the ‘favela’ in Brazil (Caldeira, 2015), ‘gecekondu’ in Turkey (Aktas, 2013), ‘banlieue’ in France (Cattedra, 2010) and ‘slums’ in India (Kundu, 1999). Informal urban settlements have long been assumed to be on the periphery, often evoking negative connotations of backwardness¹⁹⁹ and chronic problems (Harris and Vorms, 2017). The concept

199 “Even the characteristics that kampongs did have represented a lack of some-thing more positive: the dust and mud of the unsealed roads and paths produced a lack of hygiene and a lack of traffic flow; the bare-breasted women who washed clothes in the Molenvliet canal, and who figure as a recurrent theme in films about Jakarta (Berita film no. 18 1943; Nederlands Indië voor 1942 (14) 1939), lacked decency; the autonomy of the kampong administration meant being ‘sadly’ excluded from municipal administration and implicitly, therefore the kampongs lacked efficient administration. The persistent concern of administrators about the condition of the urban kampong and the efforts at kampong improvement represented, then, the symbolic celebration of modernity as the indispensable condition of humanity.” — Colombijn, Freek and Cote, Joost. “Cars, Conduits, and Kampongs: The Modernization of the Indonesian City, 1920-1960”. *Verhandelingen van het Koninklijk Instituut voor Taal-, Land- en Volkenkunde*, Volume: 295, 2014.

of ‘kampungkota’, questions this assumption of urban boundaries lying at the undesirable margins of a city, as Kusno (2017) observes a hybrid form of urban sprawl rooted in a complex interlocking of the urban and the rural at the very heart of a city:



Map II: The urban ‘sprawl’ over four decades²⁰⁰

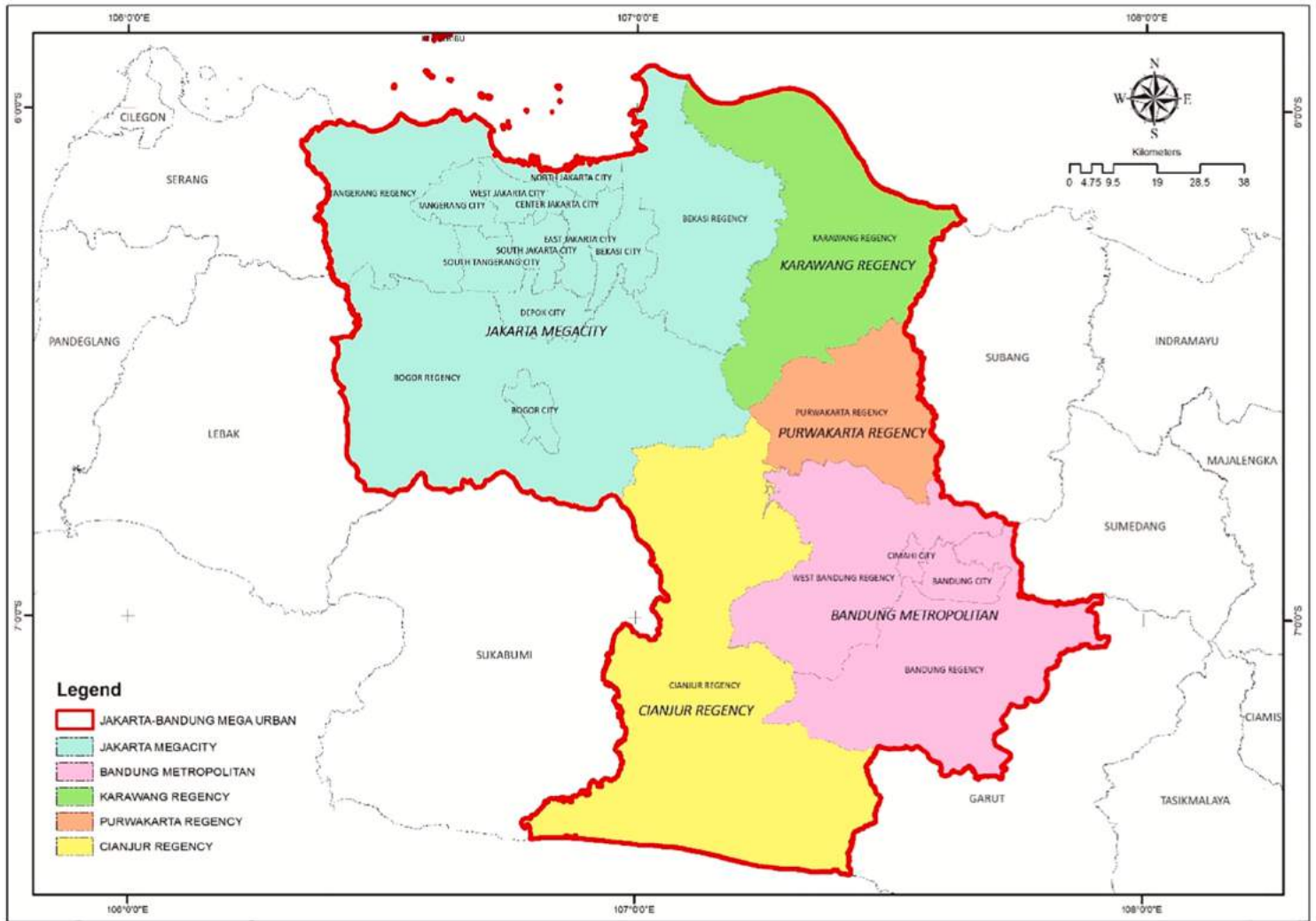
200 Alzamil, Waleed. “The Urban Features of Informal Settlements in Jakarta, Indonesia.”, 2017. <https://www.sciencedirect.com/science/article/pii/S235234091730570X#f0005>

Kusno (2017) illustrates the various ways in which intricately the ‘kampung’ and the ‘kota’ are intertwined and co-habit next to each other. The taxi driver brings the office worker to work, while the street peddler provides her lunch just outside the plazas — one or the other is not ‘on the margins’ of the city. They are connected not only within a physical space but increasingly a digital one, through the proliferation of mobile technologies.

Commercial exchange and circulations labour thus, happen right at the core of city, across various mediums of exchange in both physical and digital realms.

Such ‘semi-urbanized’ zones are a dominant feature of the core of 21st Century Southeast Asian cities which, as Kusno describes, is a exhibition of irregular yet persistent settlements (in this case, the ‘kampung’) who are constituting a salient function within everyday urban interactions. Alexander (1965) defines such interactions as what “...really controls public action. [They] varies from week to week, even from hour to hour, as one problem replaces another. Nobody's sphere of influence is entirely under the control of any one superior; each person is under different influences as the problems change”. Demarcations of formal, informal, core and margins in the context of contemporary cities are all therefore ripe for discussion from a first principles basis²⁰¹.

201 “Who provides the shape for [the urban]?...who controls the software? Who controls the information? Who controls what gets valued or not?... To understand the new kinds of cities and urbanities being created is an attempt to specify how people live in some ways... they break apart long-standing practices of knowledge, basically ways of lives are breaking down. This transforms into conditions of increasingly uncertain futures... to what extent do people re-describe their aspirations, skills, abilities to these new environments? I do not think we know enough about these yet.” — AbdouMaliq Simone on the Viral Spread of Urban Life. YouTube, 2016. <https://www.youtube.com/watch?v=IYGpxTeIWhk>



Map III: Jakarta and Bandung urban area in Java²⁰²

202 Rustiadi, Ernan, Andrea Emma Pravitasari, Yudi Setiawan, Setyardi Pratika Mulya, Didit Okta Pribadi, and Narumasa Tsutsumida. "Impact of Continuous Jakarta Megacity Urban Expansion on the Formation of the Jakarta-Bandung Conurbation over the Rice Farm Regions." *Cities* 111 (2021): 103000. <https://doi.org/10.1016/j.cities.2020.103000>

IV) An Urban Technology

A pioneer of urban theory, the sociologist Henri Lefebvre kindled his own discipline to move beyond a descriptive approach towards theoretical conceptualisation, embarking on a quest to express metropolitan societies and phenomena through theoretical concepts, forming the ‘urbanist’ school of literature. Lefebvre constructed and inspired many other scholars to construct sociological archetypes of urban heterotopia: locations of renegade commercial exchange, bus stations, fairgrounds, busy sidewalks, eccentric suburbs — vibrant contexts which enable rigorous discussions of spatiality and temporality. Lefebvre, throughout his work in the 1970s, claim rapid urbanisation is the new force of historic change in the world, following a long era of industrialisation in modern history: “...the urban fabric grows, extends its borders, corrodes the residue of agrarian life” (2017). In response to this ‘urbanist’ school, Manuel Castells (1996) contests the notion of ‘urban’ in a positivist manner, claiming that the ‘urban’ does not represent any kind of coherent scientific object available for study²⁰³. In his seminal work ‘The Rise of the Network Society’, Castells theorises ‘the city’ as a communication infrastructure: a congregation of the circuits of capital and information, instead of conceptualising it as a physically built site or industrial sprawl.

203 Manuel Castells later on revises this view in his proceeding interviews as rather ‘too positivist’ and does concede ‘the urban’ does exist.

Intervening in this body of literature with a close scrutiny of Gojek, this chapter offers to demarcate where ‘the city’ is in Indonesia by observing the operational radius of this digitally run transportation infrastructure. Transformation of cities follow the transformation of forms and conditions of labour throughout history. Organisation around agricultural, industrial and service oriented production heavily influenced the way people inhabited and designed certain spaces, resulting in an evolving spectrum of cities. A discussion regarding a fundamental shift in labour relations would be incomplete without a discussion of how that particular shift is inspired by contemporary urban space and how, in turn, impacts its own context. Aligning with Boissiere's (1996) identification of the city as an “...instant and logistical result in which transportation, economy, energy and politics intersect”, Gojek is a multi-faceted urban phenomenon that is prevalent in more than 200 civic districts in Indonesia, representing most vivid common denominator of everyday commutes across the archipelago.

Emergence of Gojek is arguably the most significant event in Indonesia during the last decade, shaping modern social and political power through a technologically mediated intersection of a vast labour force and the ‘urban’. If an individual, be it a driver or passenger, happens to be in a zone in which he or she can summon a Gojek ride, that zone has practically been rendered urban. That zone is practically connected to any other part of the city, regardless of the income level and miscellaneous transportation options within that zone —

however close or far the zone is to the physical core of the city, it has been ‘flattened out’ of its demographic intricacies in terms of accessibility.

Gojek, in the framework of a permanent societal transience and hence the interminable question “who is a Jakartan?” (Martinez and Masron, 2020), can be read as an agent of automation and urbanisation. An investigation into ‘how and where does Gojek work’, therefore, exposes the ‘digital skin’ of the contemporary Indonesian city, one that is brought to reality with a mesh of mobile phones, GPS technology and the incessant motion of an inter-connected labour force. The labour force which has long been riding motorcycle taxis has now been legitimised and rendered legible (Lee, 2014). Indeed, the mainstream prevalence and perceived success of Gojek’s stem from their ability to build upon and translate social and technological assemblages as they redefine lack of urban infrastructure and the pain points arising from that into business opportunities²⁰⁴.

As it ‘uniformalised’ the average ojek, both metaphorically and literally, the digital platform has added a layer of assurance and trust to the everyday circulations of the Indonesian city: if one sees a Gojek whiz by, the city is at a reachable distance and it can be reached without the hassle of giving exact

204 “Conventional ojek drivers may unfairly charge passengers, since the fare is subject to negotiation between drivers and passengers, and bargaining plays a crucial role in trip costs and drivers’ daily revenues. Therefore, without any formal regulation or public enforcement, profit-related motives drive informal modes of transport under free market conditions.”— Medeiros, Rafael Milani, Fábio Duarte, Faris Achmad, and Arman Jalali. “Merging ICT and Informal Transport in Jakarta’s Ojek System.” *Transportation Planning and Technology* 41, no. 3 (2018): 336–52. <https://doi.org/10.1080/03081060.2018.1435465>

directions, price bargaining, and common safety concerns. Approaching metropolitan Indonesia's notoriously congested urban traffic as a chronic techno-political problem of failed infrastructure and weak top-down governance (Lee, 2014), irregular and ad-hoc urban mobility solutions such as Gojek are observed to take up responsibility and govern the daily lives, circulations and desires of city dwellers²⁰⁵. Solving navigation issues through its embedded GPS tool, eliminating bargaining by pre-set pricing and alleviating many concerns regarding safety by providing an emergency call option and mandatory helmets, Gojek disinter mediates power away from the driver and elevates itself to an unavoidable level of relevance in the everyday life of an urban Indonesian. The platform's motorcycle taxi is arguably the most efficient option of transportation in order to leak through the infamous metropolitan macet²⁰⁶ in cities such as Jakarta and Denpasar, as Gojek takes such jams as a given habitat — not an inconvenience, incessantly recreating itself within the chaos of the city.

205 “The pedestrian infrastructure in Jakarta does not encourage people to walk their last mile when commuting, which also encourages ojek use (Mochtar and Hino 2006). People who walk in Jakarta must be alert to the risk of traffic accidents and robbery (Leather et al. 2011). The most convenient walking pathways are only present in the center of the business district, where the sample distribution took place in this study. Informal commerce occupies many of the walkways that exist throughout the city.” — Medeiros, Rafael Milani, Fábio Duarte, Faris Achmad, and Arman Jalali. “Merging ICT and Informal Transport in Jakarta's Ojek System.” *Transportation Planning and Technology* 41, no. 3 (2018): 336–52.

206 Traffic jams in colloquial Bahasa Indonesia.



Map IV: Jakarta in Jabodetabek and Java²⁰⁷

207 Martinez, Rafael, and Irna Nurlina Masron. "Jakarta: A City of Cities." *Cities* 106 (2020): 102868. <https://doi.org/10.1016/j.cities.2020.102868>

V) Transportation Infrastructure of the Capital

Jakarta, well-known for its traffic woes, ranks 10th worst urban zone in the world to commute as of 2020²⁰⁸. Jakartans spend more than half their daylight under their hoods or helmets, stuck in traffic, and when they are able to move, their speed averages 5 km/h during rush hours (Martinez and Masron, 2020). Each day, Jakartan streets host more than 20 million vehicles, with an annual growth of that figure by approximately 10%²⁰⁹. Home to more than 30 million people²¹⁰ with a density of 4,461 person per kilometre square²¹¹, there are more than 20,000 public transportation stops across central Jakarta²¹², including all known angkot (minivan), minibus, Transjakarta and train stations. For the average Jakartan though, many of these public transportation stops are difficult to reach and provide too low frequency of rides.

208 Davies, Alex. "The World's Most Traffic-Choked Cities, Ranked." *Wired*. Conde Nast, January 29, 2020. <https://www.wired.com/story/worlds-most-traffic-choked-cities-ranked/>

209 73.92% of these vehicles are motorcycles, passenger cars 19.58%, load vehicles 3.83%, public transportation 1.88% and official vehicles 0.79%. Source: Badan Pusat Statistik (BPS) (the Indonesian Central Statistics Agency), 2018.

210 "In 1980, the total population in the Greater Jakarta area was 11.4 million, and by 2018, it had increased to 34 million, with 10 million in the city of Jakarta. The UN (2014) reported that Jakarta had a population of 10.2 million inhabitants. However, the UN's report underestimated the urban agglomeration in Jakarta because it neglected Jakarta's suburban population, which accounts for two-thirds of the population in the Greater Jakarta area. In contrast with the UN, RIHN (2014) ranked the Jakarta megacity as the second-largest megacity worldwide, after the Tokyo megacity". — Rustiadi, Ernan, Andrea Emma Pravitasari, Yudi Setiawan, Setyardi Pratika Mulya, Didit Okta Pribadi, and Narumasa Tsutsumida. "Impact of Continuous Jakarta Megacity Urban Expansion on the Formation of the Jakarta-Bandung Conurbation over the Rice Farm Regions." *Cities* 111 (2021): 103000.

211 Prayudyanto, Muhammad, and Muiz Thohir. "Data Collection Report Greater Jakarta Area (Jabodetabek) Indonesia." *Sustainable Urban Transport Index (SUTI) for Asian Cities*, 2017.

212 Greater Jakarta comprises of the 5 cities surrounding what is considered the core area: Bogor, Depok, Bekasi, Tangerang and South Tangerang.

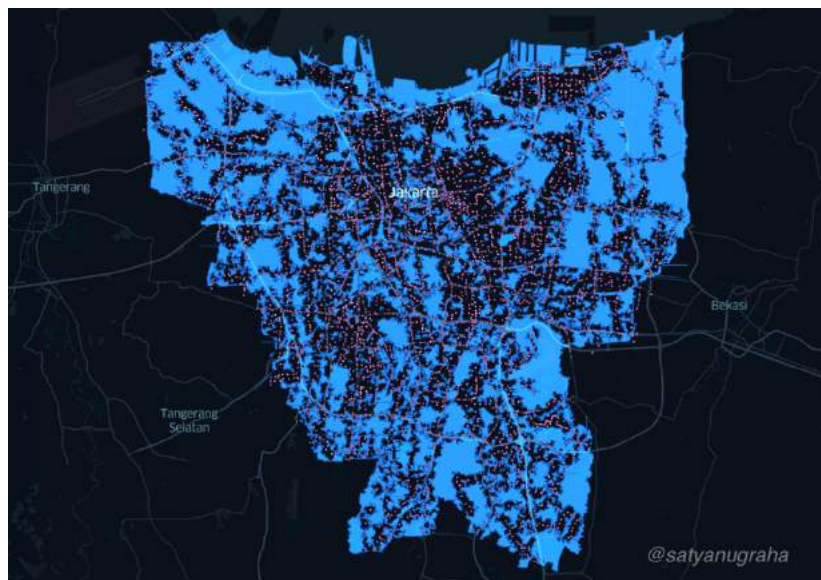
Table I: Greater Jakarta's transportation modalities²¹³

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

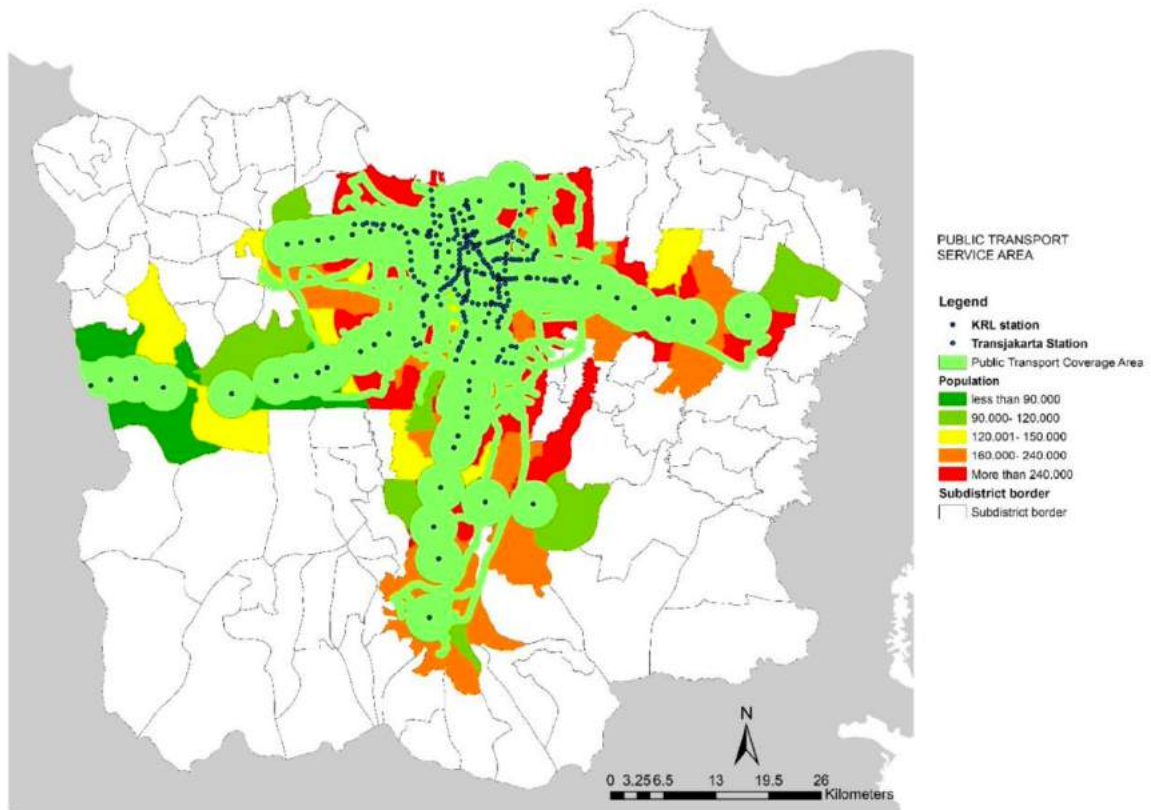
213 Palevsky, Benjamin. "Motorcycle Taxis in Jakarta, Indonesia The Case for Recognition and Integration of Motorcycle Taxis in Jabodetabek's Transportation System." Penn Iur Series On Informality, November 2019.

Appendix P of this chapter demonstrates spaced out nature of public transport nodes and the practical distance of an average Jakartan to reach them by foot. The unit of measurement in urban studies for a location to be considered as within walking distance is often considered to be a radius measuring 400 meters, equivalent to a journey of 5 minutes (Olson, 2010). By these metrics, almost half of Jakarta's formal urban zone, as per the maps in Appendix Q and below, is practically unreachable by using public transportation. Such conditions, coupled with the availability of affordable locally produced versions of Japanese branded motorcycles have encouraged private vehicle usage, as it increased significantly over the past two decades:



Map V: Black areas are reachable by informal public transport. Blue areas are uncovered²¹⁴

²¹⁴ Nugraha, Satya. "Let's Fix Jakarta's Traffic," October 16, 2018. <https://medium.com/life-at-go-jek/lets-fix-jakarta-s-traffic-a968dbeb74e6>



Map VI: Officially recognised formal public transport service area²¹⁵

215 Prayudyanto, Muhammad, and Muiz Thohir. “Data Collection Report Greater Jakarta Area (Jabodetabek) Indonesia.” *Sustainable Urban Transport Index (SUTI) for Asian Cities*, 2017.

Accordingly, the share of public transport usage tends to consistently decreased — in the year 2000 the use of public transport was around 58% in daily commutes and has significantly decreased to 27% by 2017²¹⁶. As of 2015, about 1.4 million daily commuters travel in and out of the city core, from what is considered to be ‘the outskirts of Greater Jakarta’ — 58% of these commuters use motorcycles, 12.8% use cars and only a quarter of them use public transportation²¹⁷. Appendix Q lays out the total of 20,000 transportation stops on the Jakarta map with a 500-meter walking route around each, depicting how much of the city is covered within the current public transportation ecosystem. Regarding this model, 45% of where Jakarta’s urban area is considered to be is practically unreachable by a public transportation stop, representing an area of almost 300 million square meters out of a total of 655 million. Half of Jakartans are thus cut off from the primary circulations that the formal transportation routes offer them to commute ‘in and out’ of the where city centre. The number of motorcycles on Jakarta’s roads hover around 13 million as of 2018, triple that of number of automobiles²¹⁸.

216 Prayudyanto, Muhammad, and Muiz Thohir. “Data Collection Report Greater Jakarta Area (Jabodetabek) Indonesia.” Sustainable Urban Transport Index (SUTI) for Asian Cities , 2017.

217 Budiari, Indra. “1.38 Million Commute into Jakarta Daily.” The Jakarta Post, February 17, 2015. <https://www.thejakartapost.com/news/2015/02/17/138-million-commute-jakarta-daily.html>

218 “In 2018, Jakarta was ranked by traffic information and navigation service provider, TomTom as the third city in the world most affected by traffic congestion, after Mexico City and Bangkok. Jakarta has over 13 million motorcycles and 4.4 million cars on its roads. It is estimated that more than 2.1 million trips are made from the outskirts of Jakarta into the city daily. Only around 20 percent of these trips are made using public transportation due to inefficient and unintegrated services. A study by Uber in collaboration with the Boston Consulting Group found that on average, Jakartans spend 22 days a year stuck in traffic compared to citizens of other major Asian cities who spend around 19 days on average.” —

The overall infrastructural lacks which result in incessant gridlocks across metropolitan Indonesia renders large cars and jeeps owned by the affluent urban denizens temporarily useless at rush hours. The motorcycle is perfectly geared for this particular loophole, as it swifts through traffic, being able to provide better mobility for the masses. Such acute usefulness allows Gojek's user and driver base to cut through the demographic mix of Indonesia as all classes of income and status depend on the platform as a vital technological solution for their daily routines²¹⁹. Day in, day out, the 'suburban poor' of the 'kampungkota' and the 'white-collar rich' of the 'Central Business District', share a bike ride by being matched through the platform's algorithm — in such a fashion that would be considered as an intimate arrangement in many context. Martinez and Masron (2020) observe Jakarta from similar a perspective, formulating its standpoints of 'practioners of the city'. Theorising the city as a living entity with its own particular processes, periods, novelties, their recent work hashes out the ways in which Jakartans have gained agency in the visible changes within the contemporary city.

Team, The ASEAN Post. "Jokowi Wants Jakartans to Use Public Transport." The ASEAN Post, February 10, 2019. <https://theaseanpost.com/article/jokowi-wants-jakartans-use-public-transport>

219 "Ojek are both complements and alternatives to the public transport system in Jakarta, which has poor integration and coverage. For passengers, the economic cost of an ojek trip exceeds that of other intermodal commuting links with public transport. Ojek passengers who reported intermodal commuting with BRT spend around 80% of their daily transport expenses on the ojek trip link." — — Medeiros, Rafael Milani, Fábio Duarte, Faris Achmad, and Arman Jalali. "Merging ICT and Informal Transport in Jakarta's Ojek System." *Transportation Planning and Technology* 41, no. 3, 2018.

It is ‘the city’ that offers the scale, proximity, amenities, and specialisation of talent that enables digital sharing economy firms to flourish²²⁰. Unlike earlier generations of information technology enterprises, sharing economy companies rely on a critical mass of labour, hardware and users that are physically close to each other to render their platforms viable, finding value in the beneficial spillovers from geographic proximity (Davidson et al., 2018). Gojek is a technological artefact that is incessantly assembled upon a variety of infrastructures within a city setting on an everyday basis, rendering it an apt case to probe into the definition of ‘what exactly constitutes a city’ — a question that has been long been grappled with by many scholars from an array of disciplines, pursuing a variety of methodological approaches²²¹.

Garcia (2018) takes upon the notion of commuting ‘in and out of the city’ in his ethnographic account, as he notes Jakarta accommodates numerous cities at once, an undeniably permanent space that is also constantly experienced in provisional terms. Countless journeys in and out of the city by millions of individuals involve opportunistic and pragmatic strategies, deliberately deployed to lead a temporary way of living the urban, shaping Jakarta’s provisional and dynamic landscape. Due to its inherent dynamism, Jakarta is

220 “Particular lower income worker could not afford the transport cost to travel from urban fringe to centre. Thus, slums and squatters area are obviously seen in particular place in the city of Jakarta side by side with luxury apartment.” — Prayudyanto, Muhammad, and Muiz Thohir. “Data Collection Report Greater Jakarta Area (Jabodetabek) Indonesia.” Sustainable Urban Transport Index (SUTI) for Asian Cities , 2017.

221 In this chapter, a particular urban infrastructure such as the mainstream usage of the GPS in a mobile interface, is approached as a domain of simultaneous relations, rather than a stand-alone phenomenon (Soja, 1989).

“...always in the making, eternally developing, mutating, and thriving on the fringes of what is socially, culturally and not uncommonly legally acceptable”. What one observes on the Greater Jakarta maps that are in the appendices of this chapter, therefore, are merely glimpses of a vast physical space that is intricately recreated every single moment by its mobile inhabitants. Accordingly, observing the city through its inherent mobility and dynamism, Caldeira (2015) emphasises the motto of the 2013 Sao Paulo protests²²²: “A city only exists for those who can move around it”. Such observations could be best read in the framework of the right to the city, considering the latent desires for mobility and visibility of urban populations, rooted in continuous difficulties to be able to move around within and be seen as an undisputed element of the city’s core.

Indeed, it is perhaps this volatile nature of cities that keep it a fair ground for the everyday person to pursue its desires, hopes and search for basic sustenance. If cities become ‘permanent’ and rigid, where would the opportunity lie? The right to the city is exercised through the ability to be a part of populous circulations, be able to inhabit and labour within a certain space without having

222 “...especially in the 2000s, as the PT has opted to promote consumerism as a mark of social mobility and has created incentives and subsidies for the acquisition of individual cars. This was done at the expense of policies to expand public transportation and to create better transportation infrastructure. As a result, São Paulo, a city of around 11 million inhabitants, had in 2011 more than 7 million registered vehicles. Of this total, more than 5 million were automobiles and around 900,000 were motorcycles. The inevitable result was impossible traffic and a permanently congested city. It is thus not hard to understand why traffic, mobility, and the price of public transportation were the triggers of the protests in June of 2013.” — Caldeira, Teresa P. “Social Movements, Cultural Production, and Protests.” *Current Anthropology* 56, no. S11 (2015). <https://doi.org/10.1086/681927>

to necessarily 'own' it. If Jakarta was not provisionally experienced, how would the average person be able to walk in and participate in its commercial and societal flows? If there was no macet in the city, both metaphorically and in its literal terms, where would the countless occasions to fix things with everyday tools be found? Simone (2020) illustrates that "...temporariness may be the urban's sole inhabitant, as the temporary itself seems to constantly unsettle what it means to inhabit... all kinds of strange urban formations perhaps should not be viewed as places to inhabit".

Appendix S illustrates scenes from the Jakartan urban space, dated back to February 2020. It could be observed, among many others points, urban Indonesia is typically a multi-modal and hence a multi-temporal space. Formulating Gojek 'as city', demonstrates how a dynamic urban infrastructure is a more illustrative and accurate way of imagining the city — not necessarily as a 'place to reside', but perhaps more of a space of condensation of dispersed and multiple beings and times. Gojek users, be it drivers or passengers, are always on the way to themselves who is already somewhere else, persistently solving an urban puzzle, as the amalgamation of their itineraries determine where 'the urban' is: "...the world is now urban not so much in terms of cities, suburbs or peripheries, not in terms of specific spatial designations or hybrids but in the profusion of itineraries, multiple times, disjointed places and ways of doing things (Simone, 2020)".

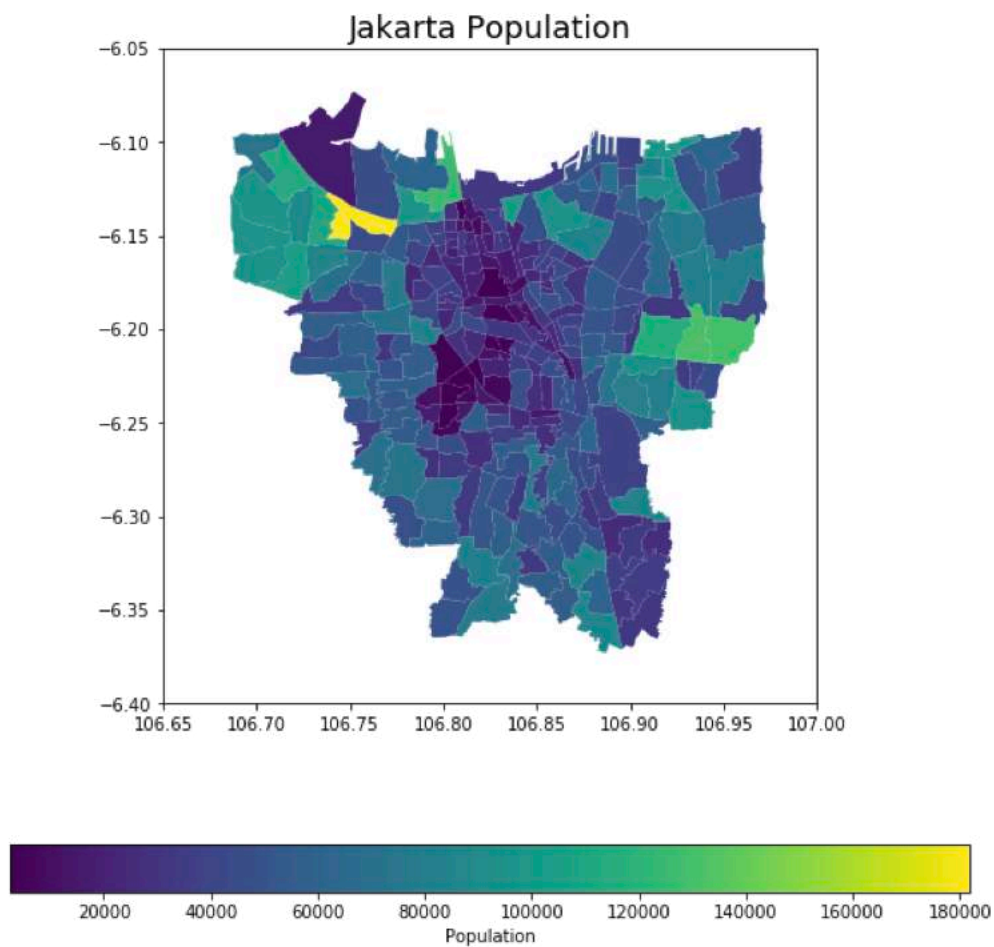
Revisiting McGee's (1967) *desakota* concept with such a framework of dynamism in mind, it is important to note that the term has stuck well in urban

theory literature and became a standard for other similar contexts in the Global South and East Asia as it appealed to fundamental socioeconomic demarcations of agriculture, industry and services to imagine a lived space²²³. Abidin Kusno (2017) however, deals extensively with the notion of ‘city-ness’ by wrestling with the questions of the ‘where the city begins and ends’ and who is indeed ‘urban’. ‘Kampungkota’ is essentially a revised version of ‘desakota’ and a formation typically observed in Jakarta, designating pockets of agrarian communities found in central parts of metropolitan cities in Southeast Asia. Observing collective labour practices, patterns of mutual financial collaboration and an observably distinct ‘art of governance’ to differentiate this suburban zone, Kusno draws attention to how the so-called ‘marginal’ suburban communities do not necessarily form in the margins of a wide reaching ‘urban sprawl’. Indeed, such simultaneously urban and rural zones tend to cohabit with the rest of the city right at its core, intricately knotted together socially, geographically, economically and technologically. The city, then, does not necessarily ‘sprawl’ away and expand in material form at the fringes as it grows in population — instead, it produces new forms of suburbanisms within its own core.

223 “Rapid urbanization and population growth is the main reason for the emergence of informal settlements in Jakarta. The massive urbanization contributed to the shortage of land supply and highland values. As a result, more than 25% of agricultural uses have been converted into industrial, commercial, or residential uses to meet the growing demand for land” — Alzamil, Waleed. “The Urban Features of Informal Settlements in Jakarta, Indonesia.” October 24, 2017. <https://www.sciencedirect.com/science/article/pii/S235234091730570X#f0005>

The key provenance of this compelling co-habitation of the city and the village literally next door to each other is the labour input ‘the kampung’ provides to the ‘kota’. Metropolitan Jakarta’s rapid ‘high-rise’ development is enabled through the manpower surplus that is immediately available ‘next door’ — not only for its construction but its constant maintenance and care. Anthropologists such as Kusno, hence, are able to produce a grounded, contemporarily adaptive, materially fluid and context dependent concept of the ‘city’, one which is constructed in social relations. Such earthbound theory emerges from the intimate dialogue of field data and rewired conceptual frameworks, allowing ‘the city’ to be read through humanistic flows and everyday circulations, sidestepping neatly drawn boundaries or rather abstract circulations such as ‘communication’, ‘capital’ and ‘information’. The assumption of a discernible separation of work, housing and business popularised by Beaujeu-Garnier (1965) in the concept of the ‘industrial city’ therefore misses the nuance, at least in the Indonesian context, that all of productive phenomena incessantly and inevitably exist together²²⁴.

224 Alexander, Christopher. “A City Is Not a Tree.” *Architectural Forum* 122, no. 1 (1965). <https://doi.org/http://www.patternlanguage.com/archive/cityisnotatree.html>.



Map VII: Population density in Jakarta²²⁵

225 Mufti, Sutan Ashari. "Spatial Data Solution for City Planning in Indonesia: Understanding The GeoDataFrame." Medium. Towards Data Science, July 29, 2020. <https://towardsdatascience.com/spatial-data-solution-for-city-planning-in-indonesia-understanding-the-geodataframe-f50d58e6c9f2>

Table II: Population density across Jakartan regions²²⁶

Number of residents, population density and area of the top 6 populous provinces in Indonesia.
Source: Statistical Yearbook of Indonesia, BPS (2020).

Province	Number of residents in 2019 (% of total population)	Population density per km ²	Area in km ² (% of Indonesia's area)
West Java	49.32 million (18.4%)	1394	35,377 (1.85%)
East Java	39.69 million (14.81%)	831	47,803 (2.49%)
Central Java	34.72 million (12.95%)	1058	32,800 (1.71%)
North Sumatra	14.56 million (5.43%)	200	72,981 (3.81%)
Banten	12.92 million (4.82%)	1338	9662 (0.50%)
DKI Jakarta	10.56 million (3.94%)	15,900	664 (0.03%)

226 Martinez, Rafael, and Irna Nurlina Masron. "Jakarta: A City of Cities." *Cities* 106 (2020): 102868. <https://doi.org/10.1016/j.cities.2020.102868>

VI) Seeing as a Platform in Urban Space

Over the past decade, scholars of border studies observed the movement of labor and economic aspects of the borders (Mezzadra and Neilson, 2013), putting forward the ways in which borders represent a key tool for accumulation of capital (Anderson, 2012) and extraction of surplus value (Herod, 1997). Krichker and Sarma (2019) formulates border infrastructures as aggregations that could be both concrete or intangible which regulate the flows of people and commodities, serving as nodes of neoliberal globalization. Coupling this approach with the rich literature of urbanism through the lens of anthropology, this chapter contends that the borders of the contemporary Indonesian city can be best described as the concentration of human interactions within a shared geographic space that revolves around a virtual realm of mobile interfaces built upon GPS technology — all geared towards the incessant exchange of diverse goods, intricate services, and basic providences within a particular digital platform.

As a vital technological solution for both the suburban poor of the *kampungkota* and the white-collar rich of the Central Business District, *Gojek* cuts through classes of income and ‘status’ and brings the two together, indeed quite intimately in terms of the level of physical proximity on a bike ride. Just this practice alone may very well be perceived as an illustration of how intimately the *kampung* and *kota* co-habituate the urban and are both socially and geographically intertwined, indicating a “...social production of urbanised

space” (Soja, 1989). Gojek’s algorithm does not consider if the potential rider is from the kampung or the kota, it operates simply according to passenger demand and supply of drivers. A passenger in South Jakarta’s business district and the kampung next to it compete for the same set of available drivers, acquiring their goal only through bidding the most lucrative destination — regardless of their personal background and formal residence.

Gojek sees as a platform: ordering and directing its users according to formal algorithms within a defined space. That space, where Gojek operates, is the most accurate frontier for the contemporary Indonesian city, as compared to formal boundaries policy makers draw around the edges of what is the city centre²²⁷. Like how the state seeks to see its citizens (Scott, 1998) — in clear units of order and thoroughly legible — Gojek sees its users and drivers as dispersed nodes to be connected in the most lucrative way possible²²⁸. Assembled as an innovative

227 “Although the Dutch were the first to attempt to plan the city, the city layout is probably more British than Dutch in character, as can be seen from such large squares as Medan Merdeka (“Freedom Field”) and Lapangan Banteng (meaning “place of the gaur [large wild ox]”). The Oriental style, or “indische” style, as the Dutch call it, is apparent not only in the city’s way of life but also in the types of houses, the wide, tree-lined streets, and the original spacious gardens and house lots. In Kebayoran, a satellite town built since World War II on the southwestern side of the city, and in other modern developments, the houses and garden lots are much smaller than in the older colonial districts... Area special capital district, 255 square miles (661 square km). Pop. (2000) Greater Jakarta, 8,342,435; special capital district, 8,361,079; (2010) Greater Jakarta, 9,586,705; special capital district, 9,607,787.” — “Jakarta.” Encyclopædia Britannica. Encyclopædia Britannica, inc. Accessed June 2, 2021. <https://www.britannica.com/place/Jakarta>

228 “One way to look at this would be to take James Scott’s (1998) interpretation in “Seeing like a State”, where he suggests how big state projects resulted in huge havoc, yet, the small group of “modernist” actors involved in them were lauded, quickly climbing the ladder, and spreading their destructive effects worldwide. If border infrastructures can be seen as big state projects, then we may conceive of them as products of massive state failures, contrary to the grand representations that valorize border security projects. Like Scott’s other modernist state projects, bordering technologies also proliferated worldwide and came to be known as “critical infrastructures” in the global security industry.” —Krichker, Dina and Sarma, Jasnea. “Can

fix for car-clogged alleyways, the business model, and key operational capabilities of Gojek (short-distance ride-hailing and small parcel logistics) does not make much sense in rural, long-distance contexts with little vehicle presence and demographic density²²⁹. In most of such settings, Indonesians tend to rely on their own motorbikes, given most of them learn to do so from a very young age. Gojek is intimately integrated with the city's public transport infrastructure²³⁰, most recently and observably through pouring passengers in and out the new MRT line.

Indeed, a key reason urban residents of Indonesia, a cohort very familiar with riding motorcycles (63% of all Greater Jakarta residents take an average of two motorcycle trips per day²³¹), opt for using the platform instead of simply taking their motorcycles around is that most Gojek rides, especially during rush hours, tend to be between nodes of public transportation²³². The Jabodetabek region's

Borders Speak to Each Other? The India–Bangladesh and Spain–Morocco Borders in Dialogue, *Journal of Borderlands Studies*, 2019. DOI: 10.1080/08865655.2019.1676813

229 Appendix T

230 “Indonesia's leading ride-hailing app operator Go-Jek and MRT Jakarta, the company behind the country's first high-capacity commuter rail network, Jakarta Mass Rapid Transit, on Tuesday signed a memorandum of understanding aimed at improving Jakarta's public transport as well as developing stations and nearby facilities... Connecting the north of Jakarta to the south, it is anticipated to create economic benefits worth an average of 15 trillion rupiah (\$1.0 billion) from residential and commercial developments around each of the 13 stations. There is also a plan to link MRT stations directly with shopping malls.” — Shotaro Tani, Nikkei staff writer. “Go-Jek and MRT Jakarta Team up to Boost Efficiency of Public Transport.” *Nikkei Asia*. Nikkei Asia, May 22, 2018. <https://asia.nikkei.com/Business/Companies/Go-Jek-and-MRT-Jakarta-team-up-to-boost-efficiency-of-public-transport>

231 Palevsky, Benjamin. “Motorcycle Taxis in Jakarta, Indonesia The Case for Recognition and Integration of Motorcycle Taxis in Jabodetabek's Transportation System.” *Penn Iur Series On Informality*, November 2019.

232 “Conventional passengers find ojek near KRL stations, while smartphone-based passengers are more likely to walk before and after an ojek trip. More than one quarter of conventional ojek trips incorporate a BRT trip before and after the ojek, while smartphone-based passengers presented a balanced distribution between other transport options before and after ojek trips” —

congested roadways handle more than 40 million motorcycle trips per day, as the ojol (ojek online²³³) infrastructure permeates the city like capillaries and connects otherwise unreachable points into the main arteries of public transport²³⁴. Irawan et al. (2019) also show that the demographic features and technology savings drive individuals' choice of transportation modes. Platforms such as Gojek work as a complementary modality for the TransJakarta bus and Jakarta urban commuter train²³⁵, as younger individuals use motorcycle taxis as feeders to public transit stops — whereas elderly choose to interact with the city on more familiar terms outside the digital realm.

Gojek is an integral and intricate facet of human circulations in urban Indonesia, rendering it suitable to draw the boundaries of an Indonesian city according to its operational radius. This novel approach offers an alternative to the earlier frameworks which are constructed upon certain industries (agriculture vs. services) or sweeping phenomena (such as information and capital flows) to

Medeiros, Rafael Milani, Fábio Duarte, Faris Achmad, and Arman Jalali. "Merging ICT and Informal Transport in Jakarta's Ojek System." *Transportation Planning and Technology* 41, no. 3, 2018.

233 There have been no official counts of ojek drivers in Jakarta.

234 Appendix T.

235 "We also found that most (46%) used MBRS less than three times in a week. Only 18% used public transport no more than three times per week. The majority (45%) used public transit three-to-six times per week; indeed, one-third of the MBRS customers used it more than seven times in a week. This mode use frequency phenomenon suggests that MBRS seems to act as a primary access for public transport use. This assertion is strengthened by the survey result of MBRS use showing that the service is generally used for short trips and, in most cases, the travel time was either less than 20 min (42%) or between 20 and 40 min (35%)... Twenty-point-three per- cent and 14.6% of MBRS users ride it to reach and return from a railway station/bus stop, respectively. Meanwhile, 6.2% of them ride it to transfer between public transport modes, as, for example, from a bus stop to a railway station." — Irawan, Muhammad Zudhy, Prawira Fajarindra Belgiawan, Ari Krisna Tarigan, and Fajar Wijanarko. "To Compete or Not Compete: Exploring the Relationships between Motorcycle-Based Ride-Sourcing, Motorcycle Taxis, and Public Transport in the Jakarta Metropolitan Area." *Transportation* 47, no. 5, 2019.

demarcate the boundaries of the city by instead employing a widespread form of everyday technology to draw a comprehensible frontier for the modern Indonesian city. A framework in which an emerging technological phenomenon is used to delineate where ‘the city’ is, is a natural fit for a Southeast Asian context in which urban zones (except for a few major metropolises such as Jakarta and Surabaya) are everchanging²³⁶ and often not clearly demarcated with town squares, mayor offices or large boulevards. It is a subtle yet common observation that the ‘city’ tends to shift in and out of presence on a regular trip across an island or river delta, sometimes reminding itself with a conglomeration of shops and apartments and then suddenly disappearing again, lending itself to agrarian visuals of farms and livestock. Thus, the most reliable indication of being out of the ‘city’ is the cessation of the circulation of Gojek drivers in a particular area: quite practically — if green-jacketed motorbike drivers are not whizzing around in a particular area, it is safe to assume that place is a rural zone. The practical implication then is a simple one: if someone in Indonesia launches the Gojek application on her phone and finds a ride available, she should be considered in the city — rendering Gojek the most practical indicator of where the city begins and ends in Indonesia.

234 “As described in a special periodical on architecture published in 1963 in the magazine *Sáng Dội Miền Nam*, “the houses grow so fast that maps can’t keep up“. Homes finished even before the intended completion of roads, meaning maps couldn’t update fast enough to capture the true urban context.” - Phu Vinh, Pham. “Architecture of the People: The Vietnamese Brand of Modernism.” *Southeast Asia Globe*, April 28, 2021. <https://southeastasiaglobe.com/vietnam-modernist-architecture/>.

Chapter 5: I. Conclusion

This dissertation brings together the genres of contemporary labour studies (Benanav, 2019; Rosenblat, 2018; Sen, 1999; Simone, 2014; Standing, 2014), urbanisms (Alexander, 1965; Caldeira, 2012; Castells, 1996; Elyachar, 2010; Harvey, 1989) and Southeast Asian studies (Ford and Honan, 2017; Garcia, 2018; Harms, 2017; Kusno, 2010; Lee, 2018; Sopranzetti, 2018) in order to illustrate the ways in which a technological archetype has been moulded by and in turn impacted the daily circulations of millions of Indonesians.

One of the fundamental premises of this dissertation is that scholarly literature on emerging mobile platforms has so far failed to fully capture the ways in which such platforms have been shaped by urban conditions (Davidson et al., 2018). Through dissecting how a platform like Gojek is essentially a practical solution that is moulded by urban realities, this dissertation aimed to address the concepts of money, labour and the city within an intellectually fascinating context that is urban Indonesia.

As such, the introduction chapter lays down the key components of urban Indonesia that enabled the existence of Gojek in the first place. It is only through the unique combination of certain forms of physical, technological, bureaucratic, and social infrastructures that such a platform finds an appropriate market to flourish within. Moulded together by Jakarta's infamous traffic jams, the abundance of mobile phones across the archipelago's youth, along with an

appealing technopolitical narrative and the notable motorcycle driving skills of the Indonesian labour force, Gojek is a technological assemblage that is demonstrated to be greater than the sum of its parts.

Chapter 2 begins the journey of observing the platform conceptually, through the framework of three distinct phenomena: money, labour, and the city. Tracing the foundations of urban financial infrastructure in Indonesia, the chapter aims to demonstrate the origins of formality (and hence informality) in Indonesia. Built upon the three phases of industrial revolutions in Indonesia throughout the 19th to the 21st Century, the chapter defines how ‘formality’ came to existence across the archipelago, inevitably creating its contrast: informality. Acknowledging the semantic limitations and practical pitfalls of this particular dichotomy, the chapter theorises the space in which Gojek is built and operates within as ‘popular economies’, a phrase popularised by Simone (2016).

Such conceptualisation allows for a multi-temporal and multi-dimensional approach to certain activities that are often otherwise simply referred to as ‘informal’ or ‘marginal’ (Hart, 1973; Charman et. al, 2014; Moertenbeck et al., 2015; Rothenberg et. al, 2016; Dürr et. Al, 2019; Benanav, 2019). Framing the social infrastructure in urban Indonesia brings to life the multi-dimensionality of the physical spaces and the nature of the relationships they dwell within, popular economies have converted houses across Indonesia into commercial real estate, factories into make-shift accommodation, friends into sources of immediate liquidity, familial relationships into insurance policies and

motorbikes into work tools — all depending on the time of the day, season of the year, trajectory of the economy and the available set of job opportunities.

What remains at the rough edges of popular economies is conceived to be state bureaucracy, a modern set of tools towards achieving financial record-keeping and efficiencies in Indonesia (Gaus, 2017). The chapter explores the historical trajectory of the Indonesian central government deploying its own national currency, banking system and export-import policies throughout the 20th Century. This is not to only give a backdrop to contextualise the political economy in which the platform has emerged, but also to expose the foundations of the financial infrastructure that is today considered to be ‘formal’. Laying right in the midst of this contemporary dichotomy of economic activities, Gojek thus serves as an ideal case study to decipher the roots of popular economies in Indonesia. Expanding its scope beyond the archipelago, the chapter aims to demonstrate how popular economies across global urban contexts are becoming translated onto virtual realms within smartphones through the influx of venture funds from an ever-expanding wall of monetary liquidity. Bearing in mind the current macroeconomic context, the chapter shows how Gojek has rapidly become a speculative asset which placed itself within the crosshairs of global investors with a clear cut narrative: A slice of equity in Gojek is a bet on the future of a rejuvenated Indonesia and an emerging Southeast Asia.

Forming perhaps the very core of the dissertation, Chapter 3 brings the discussion onto the field, observing how Gojek has been moulded by and has significantly impacted labour practices within streets of Indonesia.

Concentrating on three key themes of safety, certainty and mobilisation, the chapter demonstrates the commodification of work in metropolitan zones. As the hundreds of millions of Gojek users trust the overall brand and negotiate with the platform itself, rather than directly with drivers whom they would know personally to run errands for them and shuttle their items around town, this removes the drivers' agency of determining prices and exact routes, rendering their work a fungible product and hence a commodity. Relationships become commodified and impersonal – in short, urbanised, as every ride is now with someone new and strange, representing a fleeting experience both for the driver and the passenger despite its physically close and dependent nature.

Through illustrating the detailed experiences of three major contexts of the Indonesian archipelago, namely the Riau, Java and Bali, the chapter observes the benefits and drawbacks the platform has caused in the lived realities of the worker class. Gojek has legitimised, modernised and thus urbanised the habits of informal transportation and transactions within popular economies — transactions and crafts which were previously deemed 'illicit' and of 'lower-class'. Enabling a stranger a 'right to the city' (Harvey, 2008), Gojek has lowered the barriers to entry into the urban labour market for domestic migrants from rural areas. Echoing Lefebvre's (2003) seminal vision of 'the city', in which its residents manage, negotiate and mould urban space for themselves, the everyday usage of GPS and ride-hailing technologies allow immigrants to carve out a living for themselves, one that is though perpetually precarious.

The chapter rounds out by discussing how applicable the narratives in contemporary labour studies, most of which produced with the European experience in mind, are to understanding the working conditions in modern day Indonesia. The chapter reviews how the term precariat has captured the bulk of the discourse through Guy Standing's (2014) provocative and politically charged publications and became an undeniably the major influence in the emergence of a widespread literature concerning the growing precarious proletariat around the world. Standing and his subscribers argue that the nature of labour is becoming more precarious by the day, resulting in a growing mass of a 'dangerous class' (Chomsky, 2012; Hua and Ray, 2017; Pye, 2017).

This chapter argues that Southern working class most likely will not resemble the working class of the North that Standing et al. refer to in their work. The idea that the labour relations within 'latecomer nations' will follow in the footsteps of the frontrunners of industrialization does not necessarily find much ground; as many scholars (Sardar, 2013; Munck, 2015; Braga, 2016, Harris and Scully, 2015; Yasih, 2017; Lee, 2019; Ford and Honan, 2019) recognize that the North is more likely to follow the South than the other way around. Building on this fundamental recognition that has pulled labour literature beyond its outdated (often nostalgic and Eurocentric) focus on organised, unionized, formally employed workers in the North, this fourth chapter contends that the emergence of platform capitalism in the larger portion of the world precipitates significant forms of emancipation, generating an opposite trend to the precariatization that it catalyzes in the North. Gojek drivers of Indonesia could simply be observed

as the ‘rakyat’, a working class people who are not necessarily disenfranchised through their labour, as the conceptualisation of the ‘precariat’ assumes²³⁷.

Framing Gojek's inherently fluid operational radius as a dynamic frontier for the contemporary Indonesian city, the final main chapter aims to delineate the boundaries of urban activity in higher fidelity and resolution. This chapter defines infrastructures as shared circulations, as they tend to be consciously maintained yet collectively improvised, often visible yet inevitably ephemeral in their exact boundaries. This chapter aims to answer the following: Where and when do circulations take place in the context of a contemporary city? What is being exchanged and how? How do these circulations expand and shrink according to supply and demand — and how does such demographic volatility define the boundaries of the city? What form of infrastructure and medium of exchange best represent where the city is lived? As daily activities of everyday people are integral to the ways in which infrastructures are built and operated (Krichker and Sarma, 2019), the further case study of Gojek is deemed apt to answer such inquiries.

This fourth chapter dives deeper into Jakarta, a layered landscape of inhabitants and materials, a city of cities (Martinez and Masron, 2020) — observing Gojek’s digital platform’s ability to centralise and intermediate commercial

²³⁷ “Zomato and Swiggy are not the devil, they are not enemies. They are very, very necessary service providers in today’s day and age. But their methodology is questionable,” said Manu Chandra, the executive chef of Olive Beach restaurant in Bangalore.” - Christopher, Nilesh. “India's Restaurants Say They Feel Trapped under Zomato's Control.” Rest of World, July 15, 2021. <https://restofworld.org/2021/the-revolt-against-zomato/>.

flows across urban zones. Building on this ability, Gojek is construed as the most apparent form of infrastructure that formulates urban frontiers across Indonesia. Chapter 4 thus aims to illustrate that the most reliable indication of being in or out of the city is the presence or cessation of the circulation of Gojek drivers in a particular area. Emergence of Gojek is argued to be the most significant event in Indonesia during the last decade, shaping modern social and political power through a technologically mediated intersection of a vast labour force and the 'urban'. Aligning with Boissiere's (1996) identification of the city as an "...instant and logistical result in which transportation, economy, energy and politics intersect", Gojek is a multi-faceted urban phenomenon that is prevalent in more than 200 civic districts in Indonesia, representing most vivid common denominator of everyday commutes across the archipelago. Thus, if an individual, be it a driver or passenger, happens to be in a zone in which he or she can summon a Gojek ride, that zone has practically been rendered urban, as her practical relationship with the physical space around her become inevitably impersonal, traceable and monetised. It is also notable that the scholars of the North are more so concerned with the composition of urban contexts, which technological infrastructures constitute the city, with less emphasis on the tension of the urban and rural (Castells, 1996; Lefebvre, 2013). Scholars that focus on Southern settings are more so interested in this dichotomy, often framing their work in and around this tension between the metropolitan and its margins (Kusno, 2010; Harms, 2011). This reflects on their prioritisation of

whether physical structures or human relationships are the core tenet what makes a place urban, with the latter being at the forefront in the South.

a) GoTo: Further Integration of Digital Urban Infrastructures in Indonesia

Observed at a macro level, vivacious urban sharing economy theatre emanated in Southeast Asia during 2010s, with Grab and Gojek starring as its beguiling protagonists. The two companies played out a compelling script of mutual emulation and rapid expansion across the region, creating a massive, labour-intensive technology industry that has already catalysed an undeniable degree of socioeconomic impact. Perhaps nearing the script's climax, the mutual emulation and rapid expansion has more recently turned into a fiery war of attrition — for the longest while signalling an outcome in which the side with greater ammunition of financial and social capital could seize the other over the long term²³⁸. As their shareholders, most notably the Japanese conglomerate Softbank, began to prioritise profitability over growth and the region's potential user base become practically saturated, Grab and Gojek were left only with each other to target.

238 Guest, Peter, Sen Nguyen, Randy Mulyanto, and Vittoria Elliott. "Southeast Asia's Hottest Tech Deal Would Devastate Gig Workers." Rest of World, February 8, 2021. <https://restofworld.org/2021/grab-gojek-merger-could-devastate-gig-workers/>.

The prevailing scenario between 2017 and 2021 was the potential acquisition of Gojek by Grab, a possibility that has been consistently dismissed in relevant discussions as ‘unattainable’ due to the personal rivalry between the leaders of both companies. Anthony Tan (Grab CEO) and Nadiem Makarim (Gojek ex-CEO) studied as MBA classmates in the US during their youth and rumoured to be close friends due to their cultural and lingual kinship in a foreign context. That once amicable relationship has contemporarily turned into a highly competitive one, as the companies which they established in their home countries became the two prominent contenders for dominance in the urban sharing economy scene across Southeast Asia. Often making tongue-in-cheek comments due their mutual habit of emulating each other’s rapidly pivoting business models, Tan and Makarim are now charismatic young leaders with great influence in their respective national imaginaries of Malaysia and Indonesia.

In such context, Makarim decided to capitalise further on his mounting popularity among Indonesians as an inspiring figure and made an unforeseen move into politics in the 2019 elections, becoming the youngest Minister of Education of Indonesia under Jokowi’s latest cabinet. Such a move could at first glance seem like a tremendous asset for Gojek, having its co-founder and former CEO high up in the political ranks of its largest market should inevitably pay dividends in bureaucratic leverage and regulatory relief in potential legal controversies. On the flip side of that medallion though, is the challenge of keeping Gojek as a sovereign entity without its staunch leader.

There have been numerous reports²³⁹ that have been suggesting Makarim's exit would allow Grab and Gojek to broker an acquisition deal where Grab would prevail thanks to its wider spread in the region and deeper financial coffers. Such a remarkable merger would have put an end to their costly rivalry. It would have also irked lawmakers across the region, due to the monopolistic market influence the 'winner' side would enjoy, as was the case in Singapore during 2018 when Grab bought out Uber's Southeast Asian operations. If the merger were to happen, the two organizations would have had an unassailable monopoly²⁴⁰ on ride-hailing services in Southeast Asia, squeezing their labour force further for bearing their operational costs²⁴¹. Ultimately, the Gojek and Grab merger did not go through, and at the time of writing of this dissertation it looks ever so unlikely. The key sticking point in their negotiations, according

239 Palma, Stefania. "Grab and Gojek Each Claim Strength in Merger Talks." *Financial Times*, December 3, 2020. <https://www.ft.com/content/865dae7e-24ad-446d-a20c-4bfadfdb3e1d>.

240 "One early Gojek investor told Rest of World that the appeal of ride-hailing was that it promised to create a base of regular users, who could then be leveraged into other businesses, like food delivery and e-commerce. If they used enough services regularly, the thinking was that they would no longer be tempted to switch to a rival platform, no matter how many discounts competitors offered. Once they had captured consumers, Gojek and Grab could start increasing prices and move toward profitability. "These businesses ... can be very profitable, because essentially, they become monopolistic," the Gojek investor said. "We haven't reinvented the wheel, this is just monopolism in a different form..." "The amount of money we were burning on the Gojek side, and the amount of money that Grab was burning on their side, was crazy," the Gojek investor said. "We're happy that no one's got the financial means to continue this kind of behavior. We always knew there would come a time when it would have to stop." - Guest, Peter, Sen Nguyen, Randy Mulyanto, and Vittoria Elliott. "Southeast Asia's Hottest Tech Deal Would Devastate Gig Workers." *Rest of World*, February 8, 2021. <https://restofworld.org/2021/grab-gojek-merger-could-devastate-gig-workers/>.

241 "Labor groups worry that, if a merger were to happen, drivers would have less leverage than ever before. "They can control many things, monopolize the system and so on," said Taha Syafariel Baraqbah, acting chairman of Indonesia's Online Drivers' Association, who goes by Ariel. "Of course we are afraid and feel that the conditions will be even more arbitrary." - Guest, Peter, Sen Nguyen, Randy Mulyanto, and Vittoria Elliott. "Southeast Asia's Hottest Tech Deal Would Devastate Gig Workers." *Rest of World*, February 8, 2021. <https://restofworld.org/2021/grab-gojek-merger-could-devastate-gig-workers/>.

to industry intelligence reports²⁴², has been Grab CEO Anthony Tan's insistence on remaining at the helm of the combined entity, with little governance role proposed to current Gojek executives.

Anthony Tan's objections essentially forced Gojek into the arms of a local rival in Indonesia²⁴³. Tokopedia is another prominent Indonesian unicorn, an street-shop oriented e-commerce platform used by more than 8 million third-party sellers (most of whom small and medium size enterprises), and more than 90 million daily active customers across the archipelago²⁴⁴. The two companies, Gojek and Tokopedia, have built business models over the last decade that cover a wide spectrum of Indonesian internet users' activities, including e-commerce, gaming, transportation, package delivery and financial services²⁴⁵. Merged

242 "Singapore-based unicorn Grab has requested that founder Anthony Tan be the de facto "CEO for life" of a potential merged entity with Gojek, its Indonesia-based rival, as both Southeast Asian "superapps" press ahead with talks to settle their differences and join hands, Nikkei Asia has learned. Grab is also seeking several other clauses as conditions for the merger, including giving Tan sizable voting power in the company, veto rights over board decisions as well as having influence over his own compensation, according to two people privy to the matter. A separate source with knowledge said that conditions such as "who gets to appoint, and under what conditions, the new [group] CEO in the event that [Tan] passes away" are also being discussed between the two companies." Suzuki, Wataru. "Grab Demands Strong Control by Founder in Gojek Merger." Nikkei Asia. Nikkei Asia, December 24, 2020. <https://asia.nikkei.com/Business/Business-deals/Grab-demands-strong-control-by-founder-in-Gojek-merger>.

243 Florene, Ursula. "Gojek and Tokopedia Finally Tie the Knot to Form GoTo." KrASIA, May 17, 2021. <https://kr-asia.com/gojek-and-tokopedia-finally-tie-the-knot-to-form-goto>.

244 O'Neill, Michael. "How E-Commerce Is Transforming Indonesia's Retail Landscape." Business Insider. Business Insider, October 20, 2020. <https://www.businessinsider.com/how-e-commerce-is-transforming-indonesias-retail-landscape-2020-10?r=US&IR=T>.

245 "The payment piece of the combined company could be what makes GoTo more than the sum of its parts. It could allow the company to do what most fintechs only dream of and capture every frequency of consumer transaction, from the daily (groceries, travel, media) to the regular discretionary spend (food delivery) to larger purchases (e-commerce) and even investments and banking products. It's a journey that only a handful of companies in China have managed to make — notably Gojek backer Tencent and Tokopedia investor Alibaba. GoTo's aim now is to replicate that model and leverage its virally popular services into an all-encompassing super app." - Tobin, Meaghan, and Wulan Kusuma Wardhani. "Gojek and Tokopedia's \$18 Billion

together as a new entity called GoTo²⁴⁶, the technology conglomerate is valued at \$18 billion as of May 2021.

The two companies are naturally complementary in their everyday functionalities. Tokopedia has been founded in 2009, just a year from Gojek's launch, as a simple online marketplace. It has grown into a burgeoning fintech company with its own credit and peer-to-peer lending services used by 11 million merchants. While Gojek's fintech application GoPay is often used for small, daily purchases — a sate ayam from the street vendor or a brief ride from work — Tokopedia is more of a destination for larger ticket discretionary spending on items such as electronics and home goods. Tokopedia boasts 10 million more merchants than Gojek, while the platform intermediates the circulations of a 2 million strong driver base – a formidable amount only matched by its rival Grab. The merged group claims to have a total gross transaction value of US\$22 billion and more than 100 million monthly active users²⁴⁷, representing a digital economy that is equivalent to 2% of Indonesia's GDP.

Merger Sets the Stage for Regional Fintech Showdown.” Rest of World, May 28, 2021. <https://restofworld.org/2021/a-battle-royale-in-asian-fintech/>.

²⁴⁶ “Gojek's shareholders will have a 58% stake in Goto – the merged entity of Gojek and Tokopedia – while Tokopedia owners will take the rest. Patrick Cao and William Tanuwijaya will continue to lead Tokopedia as president and CEO, respectively. Meanwhile, Soelistyo will head the unit's payments and financial services arm. His co-CEO Kevin Aluwi will remain to head Gojek.” - Sri, Deepti. “Report: Gojek Co-CEO Andre Soelistyo to Head Merger with Tokopedia.” Tech in Asia - Connecting Asia's startup ecosystem, April 19, 2021. <https://www.techinasia.com/report-gojek-cocoeo-andre-soelistyo-head-merger-tokpedia>.

²⁴⁷ “The Alibaba of SEA? How GoTo Is Shaking Up Fintech in the Region.” Planet Storyline, June 3, 2021. <https://planetstoryline.com/the-alibaba-of-sea-how-goto-is-shaking-up-fintech-in-the-region/>.

What is structurally notable and perhaps a fortunate outcome for the labour force of both companies is that this particular merger, instead of the potential one between Grab and Gojek, does not potentially disempower the vast driver and merchant base. A merger between Grab and Gojek would have monopolised the Indonesian urban transportation and delivery sector, ripping off the already little bargaining power pengojek have. A merger between the small merchant focused Tokopedia and metropolitan transportation oriented Gojek, rather, may end up enhancing the options of the driver base in terms of the services that they can provide. It is though still early to confidently claim such an outcome, as they merger may simply consolidate the capital allocation of the two companies, resulting in no real increase in income for the drivers. Such potential developments should be in the crosshairs of any scholar researching the technology sector of Indonesia within the coming decade.

b) Ending Remarks

The impact Gojek has had on Indonesia cannot be understated. A Latin American adage may perhaps illustrate this point: "...if you leave Argentina and come back 20 days later, you will find everything is different. If you leave and come back in 20 years, you would find everything to be the same". The weary saying could be read as a rationalisation of the seemingly turbulent and often lacklustre nature of development across the Global South, anywhere from Turkey to Thailand. As much as the axiom has an appealing wit, the historical

accuracy of it is rather debatable, especially in the Southeast Asian context — one has to simply observe urban Java. If one had left in the year of 2000 and came back to the populous Indonesian island after 20 years, would he or she find everything to be the same?

It would not be a stretch to claim Gojek is the most significant, at least most visible, shift in Indonesia from 20 years earlier. Indonesia now bears a novel form of urban infrastructure. This particular urban infrastructure boasts an unavoidable presence across a vast and dynamic space — allowing a rather flamboyant visibility of a previously invisible cohort of labour, essentially through the digitalised centralisation of knowledge and hence power; ultimately reconfiguring what constitutes the contemporary Indonesian city. Inquiring into Gojek in this dissertation thus offered a dive into the intricate makings of a ‘black-swan’ event (Taleb, 2012) — allowing to experience a rare, unprecedented and high impact business in an exciting, rapidly emerging market. The brand ‘Gojek’ may fade from relevance as corporate partnerships (such as the recent one with Tokopedia²⁴⁸) gain priority and the industry consolidates. What will remain though, is the platform’s undeniable impact upon its wide habitat throughout the early decades of the 21st Century. Indeed it is the impermanence of the corporation that illuminates the strength of the metropolis best, as Geoffrey West puts it, “...unlike companies which are

248 Florene, Ursula. “Gojek and Tokopedia Finally Tie the Knot to Form GoTo.” KrASIA, May 17, 2021. <https://kr-asia.com/gojek-and-tokopedia-finally-tie-the-knot-to-form-goto>.

managed in a top down fashion, cities are unruly places largely immune to the desires of politicians and planners... they are just insane masses of people [and] it's the freedom of the city that keeps it alive"²⁴⁹.

250 Lehrer, Jonah. "A Physicist Solves the City." The New York Times. The New York Times, December 17, 2010. https://www.nytimes.com/2010/12/19/magazine/19Urban_West-t.html.

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Appendix A²⁵⁰



²⁵⁰ Venkatesan, Adithya. "10 Years Of Gojek in Pictures - Tracing the Hustle." Slacker News, October 23, 2020. <https://slacker.ro/2020/10/23/10-years-of-gojek-in-pictures%E2%80%8A-%E2%80%8Atracing-the-hustle/>.

Appendix B²⁵¹



²⁵¹ Photographs taken by the author during a fieldtrip in Java, February 2020.

Appendix C²⁵²



²⁵² Photographs taken by the author during a fieldtrip in Java, February 2020.

Appendix D²⁵³



²⁵³ Photographs taken by the author during a fieldtrip in Makassar, August 2019.

Appendix E²⁵⁴



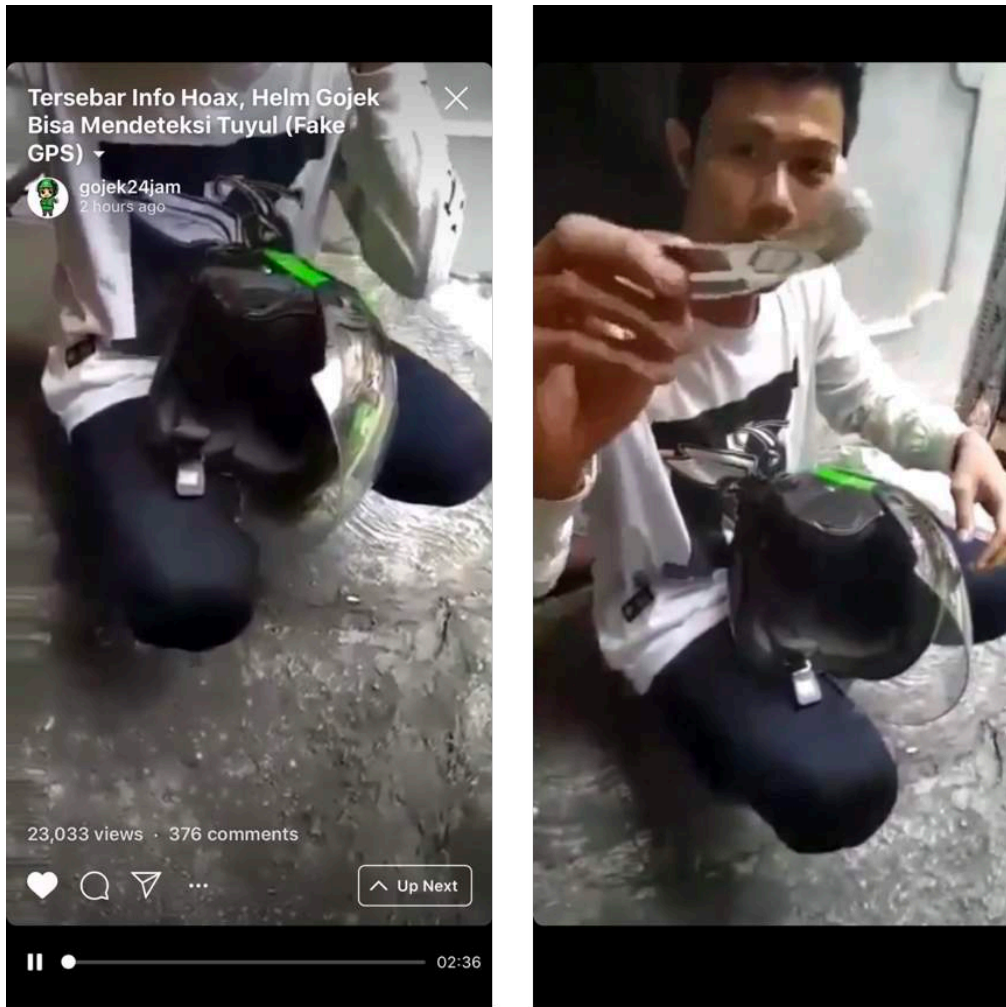
137 | Semanggi Cloverleaf Bridge (1) | Publisher: Unknown | Postmarked: 2 April 1963



21 | Hotel des Indes/Hotel Duta Indonesia (1) | Publisher: Indonesian Color Views | Circa: Late 1950s

²⁵⁴ Photographs taken in the 1950s' rapid infrastructure development era of Jakarta.

Appendix F²⁵⁵



²⁵⁵ Screenshots taken from the largest Instagram social media account of Gojek drivers in Indonesia demonstrating how to set up a faux GPS system through placing DIY chips in helmets & jackets.

Appendix G²⁵⁶



²⁵⁶ Photographs taken by the author during a fieldtrip in Java, February 2020.

Appendix H²⁵⁷



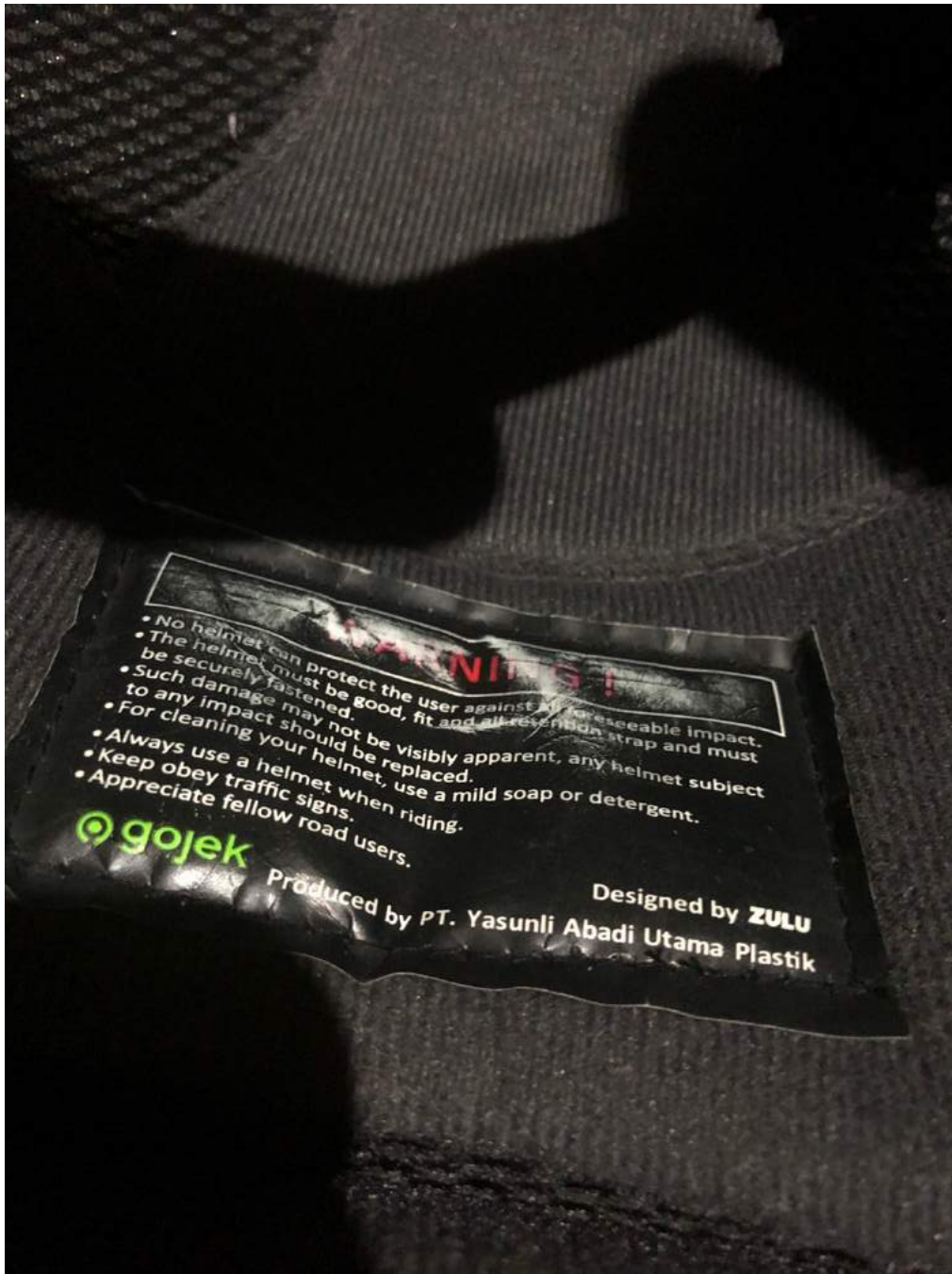
²⁵⁷ Photographs taken by the author during a fieldtrip in Jakarta, February 2020.

Appendix I²⁵⁸



²⁵⁸ Photographs taken by the author during a fieldtrip in Makassar, August 2019.

Appendix J²⁵⁹



²⁵⁹ Photographs taken by the author during a fieldtrip in Bali, January 2020.

Appendix K²⁶⁰



²⁶⁰ Photographs taken by the author during a fieldtrip in Bali, January 2020.

Appendix L²⁶¹



²⁶¹ Screenshots taken from the largest Instagram social media account of Gojek drivers in Indonesia.





godams.medan 20h



barayaonlinegaw 37m



?

Type something...

Gerakan offbid 1 hari

Jum'at, 31 Januari 2020

SEBAGAI WUJUD KEKOMPAKAN & PROTES DRIVER
ATAS KEBIJAKAN2 GRAB YANG TERLALU MUDAH UNTUK MENG-
SUSPEND, PUTUS MITRA DGN DALIL PELANGGARAN KODE ETIK,
TANPA MENGETAHUI SITUASI, PERJUANGAN & PENGORBANAN
DRIVER, SEMAKIN DIPERSULITNYA MENDAPATKAN INSENTIF
DGN SELALU DITURUNKANNYA POIN BERLIAN & KEBIJAKAN2
LAINNYA YG MERUGIKAN DRIVER

**TANPA KITA
GRAB BUKANLAH APA-APA**

Appendix M²⁶²



²⁶² Photographs taken by the author during a fieldtrip in Bali, January 2020.



Appendix N²⁶³



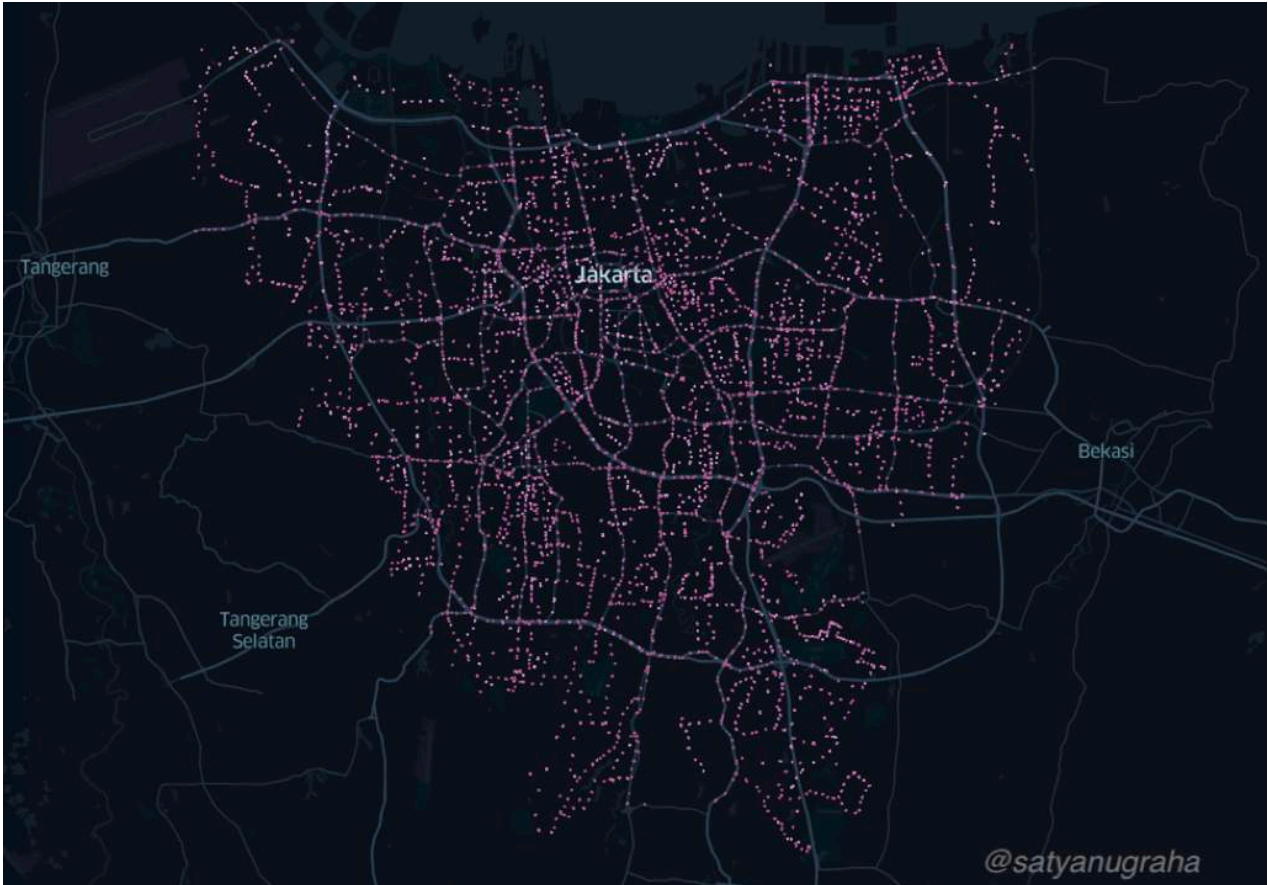
²⁶³ Photographs taken by the author during a fieldtrip in the Riau Islands, October 2019.

Appendix O²⁶⁴



²⁶⁴ Copies of Armin's archives taken by the author during a fieldtrip in the Riau Islands, October 2020.

Appendix P



Map VIII: Public transportation stops in Jakarta²⁶⁵

265 Nugraha, Satya. "Let's Fix Jakarta's Traffic," October 16, 2018. <https://medium.com/life-at-go-jek/lets-fix-jakarta-s-traffic-a968dbeb74e6>

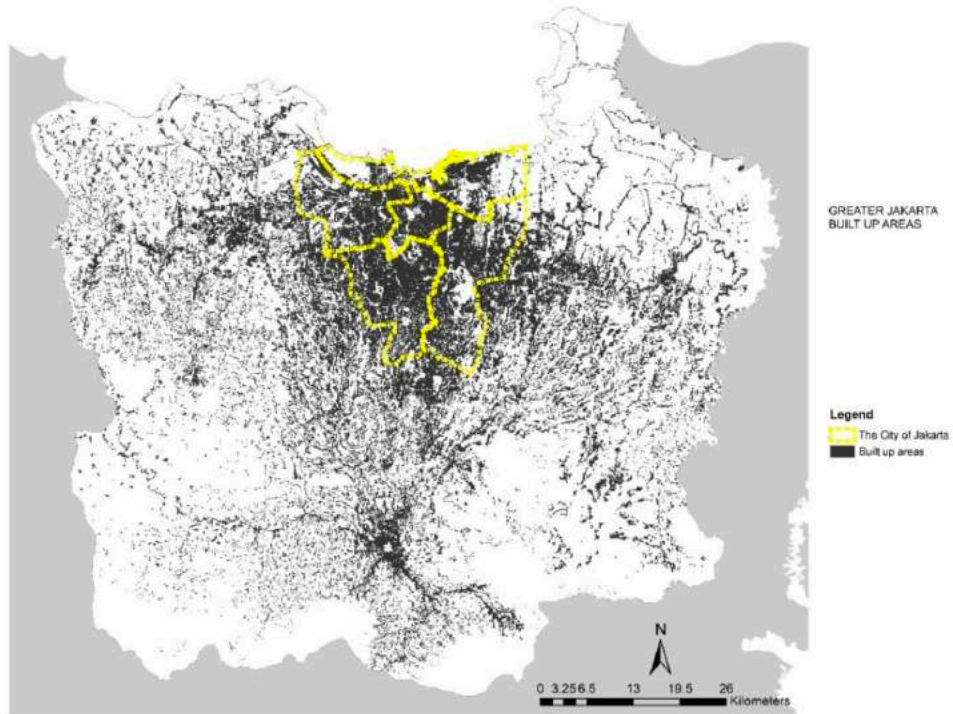
Appendix Q



Map IX: Walking distances from a TransJakarta stop²⁶⁶

266 “500-meter walkable path from a Transjakarta commuter stop in Kelapa Gading. The simulated path is the actual street route that has to be connected with the Transjakarta stop. The street path could be a main road or street alley (Jalan Gang)... Why did the executive order set the rule at “500 meters”? It serves as a starting point, but perhaps a better question is “what is a reasonable distance to walk?”. The consequence of setting this objective is important to consider. If 250 meters is the criteria, then the uncovered area will be substantially higher, requiring a much higher level of investment. If we set the range longer (say 750 meters), the government’s investment will be lower, but then people may not use public transportation.” Nugraha, Satya. “Let's Fix Jakarta's Traffic,” October 16, 2018. <https://medium.com/life-at-gojek/lets-fix-jakarta-s-traffic-a968dbeb74e6>

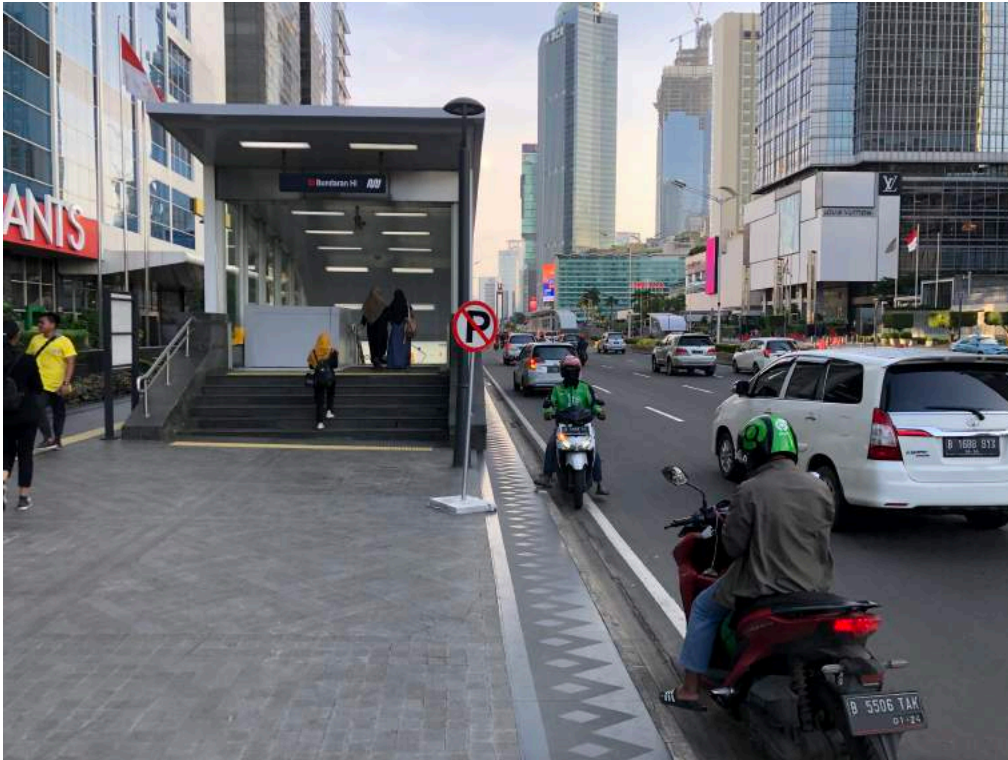
Appendix R



Map X: The total area of the Jakarta city in yellow, illustrated to constitute only 9% of total area of what is the official Greater Jakarta (Jabodetabek).²⁶⁷

268 Prayudyanto, Muhammad, and Muiz Thohir. "Data Collection Report Greater Jakarta Area (Jabodetabek) Indonesia." Sustainable Urban Transport Index (SUTI) for Asian Cities, 2017.

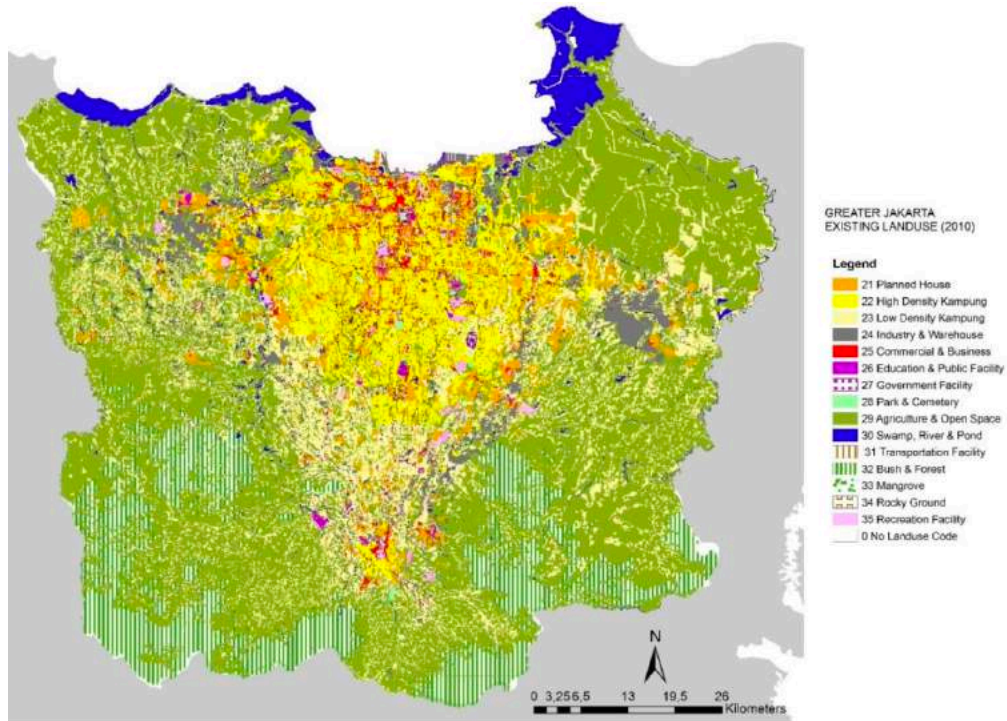
Appendix S²⁶⁸



²⁶⁸ Photographs taken by the author during a fieldtrip in Java, February 2020.



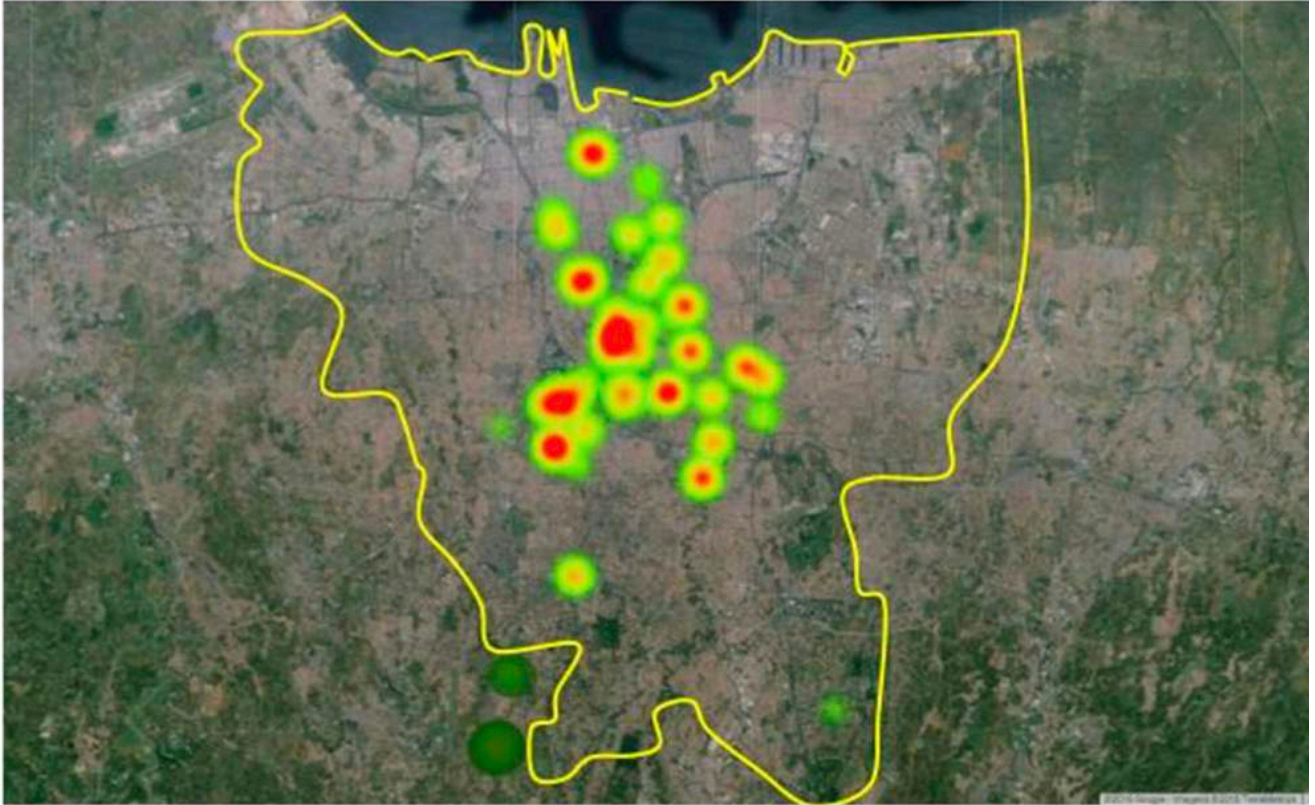
Appendix T



Map XI: 'Kampungkota' illustrated in yellow²⁶⁹

269 Prayudyanto, Muhammad, and Muiz Thohir. "Data Collection Report Greater Jakarta Area (Jabodetabek) Indonesia." Sustainable Urban Transport Index (SUTI) for Asian Cities, 2017.

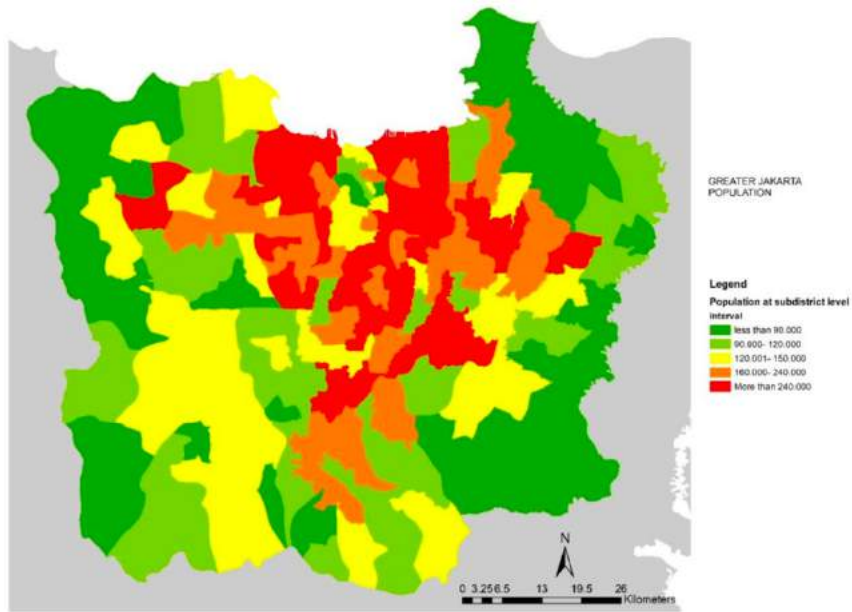
Appendix U



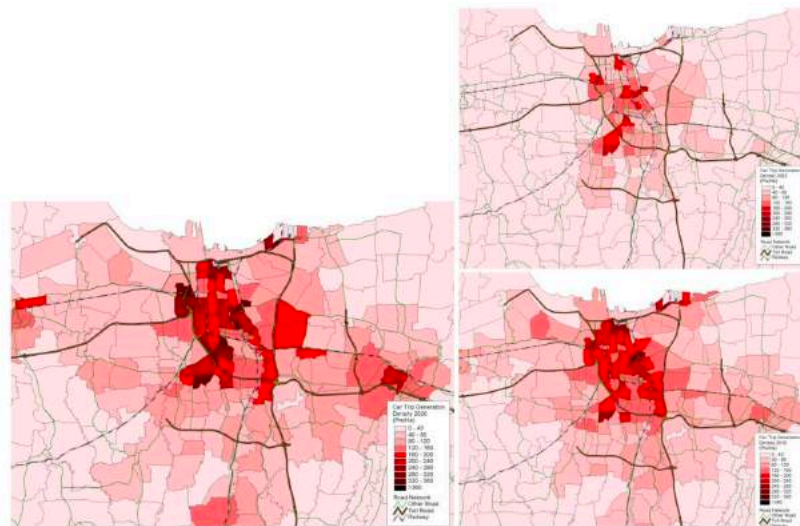
Map XII: Flocktracker researcher interface showing a heat map of sample distribution of ojek drivers within the city of Jakarta²⁷⁰

270 Medeiros, Rafael Milani, Fábio Duarte, Faris Achmad, and Arman Jalali. "Merging ICT and Informal Transport in Jakarta's Ojek System." *Transportation Planning and Technology* 41, no. 3 (2018): 336–52. <https://doi.org/10.1080/03081060.2018.1435465>

Appendix V



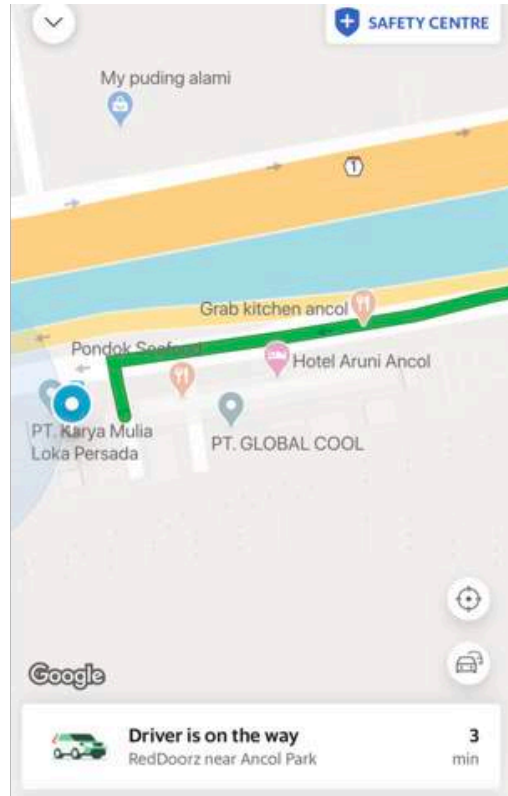
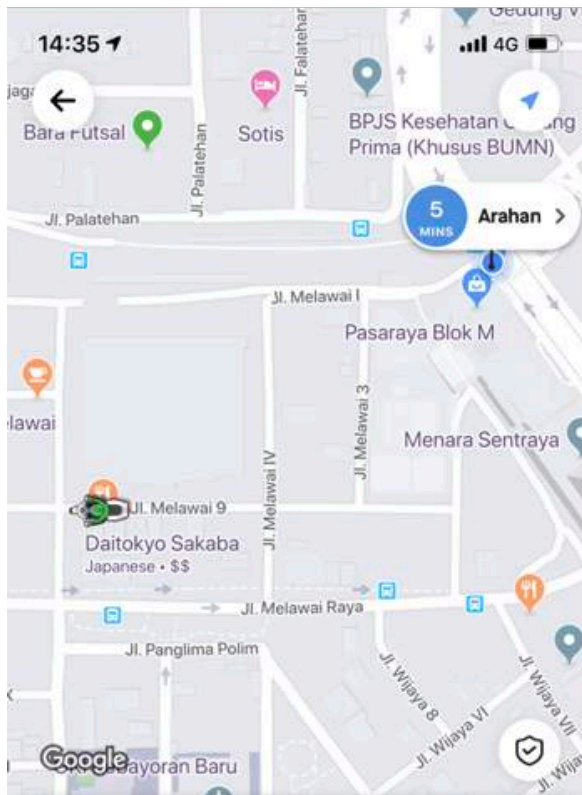
Map XIII: Settlement Density in Greater Jakarta



Map XIV: Traffic density in 2002, 2010 and 2020 (clockwise)²⁷¹

271 Maps IX and X: Prayudyanto, Muhammad, and Muiz Thohir. "Data Collection Report Greater Jakarta Area (Jabodetabek) Indonesia." Sustainable Urban Transport Index (SUTI) for Asian Cities, 2017.

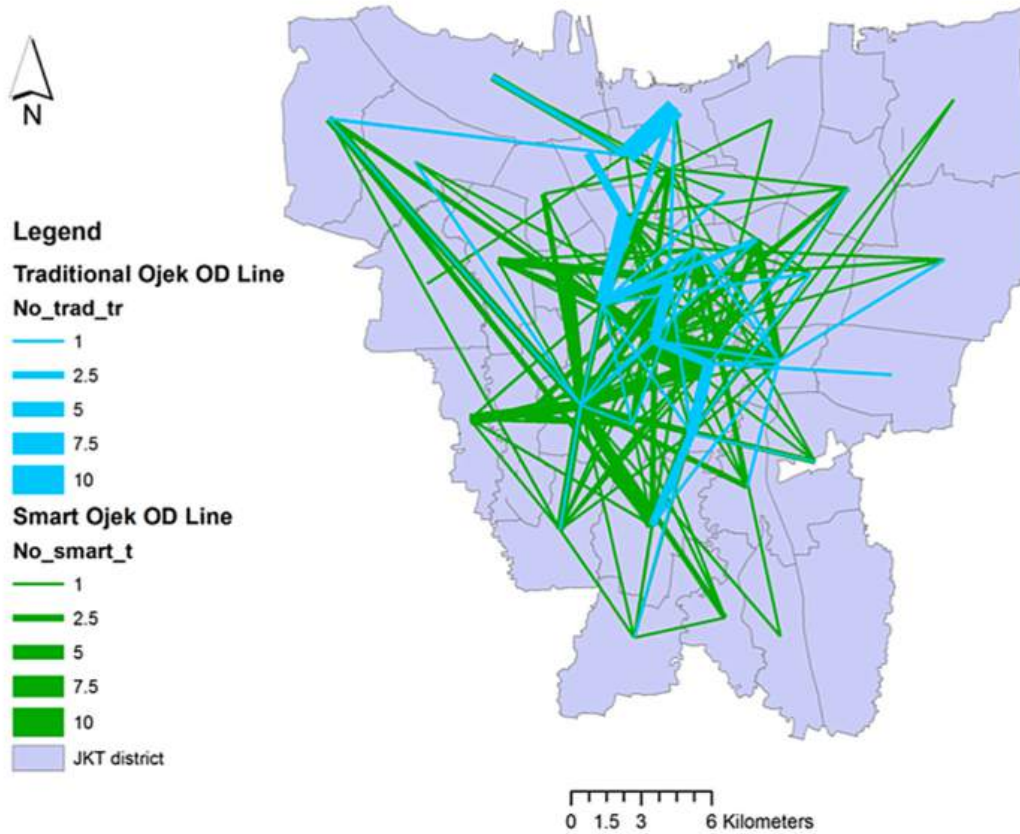
Appendix Y



Screenshot I and II: Gojek's interface, taken by author in Jakarta during

February 2020

Appendix Z



Map XV: GPS tracking of sampled ojek trips in Jakarta²⁷²

272 “Data from ojek app companies were not included in this analysis, because the companies did not send any data, despite requests. This may indicate reluctance on their part to release data they might consider market-sensitive...Interviewers went to random districts in central Jakarta and identified sample subjects that were getting on or off an ojek in that location.” — Medeiros, Rafael Milani, Fábio Duarte, Faris Achmad, and Arman Jalali. “Merging ICT and Informal Transport in Jakarta’s Ojek System.” *Transportation Planning and Technology* 41, no. 3 (2018): 336–52. <https://doi.org/10.1080/03081060.2018.1435465>