

Urban Financial Infrastructure in Indonesia

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Introduction

Urban financial infrastructure in Indonesia has been chiefly built within what Simone (2014) best 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’ decentralized 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, 1975; Rothenberg et. al 2016; 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 others' 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 (Mörtenböck et al. 2016), 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. Gojek catalyzes a fundamental societal shift as it emigrates workspaces into a virtual dimension, rendering labour to be bought and sold in a ‘non-place’¹; outside the confines of familiar faces and localities. This paper tracks the ways in which the technopolitical intervention of Gojek shifts decentralized popular economies of Indonesia into a highly centralized, granularly traceable, algorithm-driven marketplace. This paper ultimately 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 paper delineates as a form of digital, centralised, traceable financial infrastructure. Bankrolled by global streams of capital, Gojek is demonstrated to be the ultimate force of centralisation of societal circulations in Indonesia.

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 means², 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 night³. A particular technology may be used in traceable, accountable, taxable transactions in one setting and

¹ “In 1995, French anthropologist Marc Augé 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.” — “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/>.

² Rothenberg, Alexander D., Arya Gaduh, Nicholas E. Burger, Charina Chazali, Indrasari Tjandraningsih, Rini Radikun, Cole Sutura, and Sarah Weilant. “Rethinking Indonesia’s Informal Sector.” *World Development* 80 (2016): 96–113. <https://doi.org/10.1016/j.worlddev.2015.11.005>.

³ “Many Ojek drivers have more than one job and taxi driving is often the relatively flexible second job. One driver told us that during daytime he works in a hospital in the administration. Afterwards, he gets on his motorbike and rides until late into the night for Grab and Gojek. But few drivers have such comparatively stable and formal jobs. Others work e.g. in security. Before they started to drive for the apps, many people used to work as office boys or worked at food stands as a cook. A driver who speaks English quite fluently, worked as a manager in a restaurant, for example.” — (2019). Gojek: Delivery workers struggle in Indonesia. Retrieved October 22, 2020, from <https://libcom.org/blog/gojek-delivery-workers-struggle-indonesia-28062019>

in ad-hoc, clandestine, stealthy exchanges in another⁴. Thus dynamic, not static, ways of thinking is required in accurately depicting the true nature of financial infrastructures in any context, especially the Global South. 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, 2013) — 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 Bank estimates the share of small enterprises — which tend to be overwhelmingly informal entities — within the GDP to be around 40%⁵.

Owing to their flexible, mobile and decentralised nature, popular economies perform vital economic functions within the Indonesian socioeconomic infrastructure⁶. Popular economies emerge from and thrive within financial crises, infrastructural collapses and political turmoil, displaying features of anti-fragility (Taleb, 2016). 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

⁴ “To survive, 49 percent of our respondents ran small online businesses. 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/>

⁵ Asian Development Bank. “The Informal Sector and Informal Employment in Indonesia.” *COUNTRY REPORT 2010*, 2011, doi:ISBN 978-92-9092-243-8.

⁶ “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.

and arbitrarily determined interest rates — to small borrowers who would otherwise be left without it⁷. Popular economies, however, are inherently structured around antagonism and conflict, be it explicit or implicit (Simone, 2014). As such, the globally dispersed environs of popular economies are sites of societal upheaval, exuberant inequality and abrupt migratory movements (Mortenbock et al. 2016). 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 be⁸, 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 Gojek 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 50k 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 jackets⁹ and put in rigged computer chips into their gear instead. These rigged DIY chips install (or sync with) 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 9k each on their Gojek app (a typical

⁷ 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/asia/list/Firdausy.html.

⁸ "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>.

⁹ 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 for photographs of the replacement of the computer chip within Gojek gear.

price for a 10 minute ride) and the Gojek algorithm deducts 1.8k from each ride (20% commission). A total of 9k commission is transferred to the central Gojek account, while the algorithm pays a bonus of 25k for the 5 rides completed (typical daily incentive amount). Therefore a trickster driver can make 16k profit off each set of 5 fake rides, and could keep on earning more than a day's worth of salary¹⁰ just through this method, given the Gojek algorithm offers another 50k 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 ways¹¹, but mostly in vain. During my fieldwork, I have come across drivers who claim that Gojek is pushing a nationalistic rhetoric to curry them into not defrauding the 'pride of Indonesia' — a rhetoric most drivers are generally fond of¹², yet do not subscribe to the extent of diverting them away from the thrill and immediate financial benefits of pursuing the 'hoax GPS' trick. What is perhaps most notable regarding this phenomenon is that the conventional exploiter vs. exploited hierarchy is flipped on its head¹³. 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.

¹⁰ Most of my informant drivers' estimates of their daily revenue converge around 200-250k rupiah per day (with around 20-30k cost). They average 5-6 million rupiah per month — roughly 30% more than the national average (4 million rupiah).

¹¹ 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>.

¹² "The end for Uber in Indonesia is seen by many drivers as a first victory. They concentrate their protests against the Singapore app company Grab. We were told different arguments for focussing on Grab, because the working conditions are worse and pay is lower than with Gojek or at nother occasion that Grab is the capitalist thinking from abroad entering Indonesia and they need to fight against it to finally make Gojek or other domestic apps respond to the demands. The foreign investors of Gojek are also seen as a problem. The hope that Indonesian app companies are less exploitative, is certainly illusory. In view of the Indonesian economic situation, where there are hardly any large companies, Gojek etc. with foreign investors is by far the largest start-up in Southeast Asia. For years drivers have experienced that no matter how numerous they are, they struggle to force the app companies to pay more money." — (2019). Gojek: Delivery workers struggle in Indonesia. Retrieved October 22, 2020, from <https://libcom.org/blog/gojek-delivery-workers-struggle-indonesia-28062019>

¹³ "...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 Ph.D Student in Political Science. "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>

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, Gojek, 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 threaten the company with strikes, unless their fellow workers are accepted back¹⁴. 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, 2012). Seeking to expose such multidimensional power disparities is a critical task, as only by emphasising such moments of struggle that we can notice historical novelties¹⁵. 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'¹⁶ are not unacknowledged, unsanctioned or rudderless constellations of a weak populace that is simply readily available to compensate for economic crises. They are, rather, very well organised arrangements of social wealth (Simone, 2013).

¹⁴ Nastiti, A. D.. "Worker Unrest and Contentious Labor Practice of Ride-Hailing Services in Indonesia 1." (2017).

¹⁵ Gago, V. (2018, June). Veronica Gago: What are popular economies? / Radical Philosophy. Retrieved August 26, 2020, from <https://www.radicalphilosophy.com/article/what-are-popular-economies>

¹⁶ 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). Retrieved August 26, 2020, from <https://gofigure.gojek.com/episode/episode-11-how-3-founders-met-in-business-school-and-joined-forces>

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 business scholars C.K. Prahalad and Stuart L. Hart, 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 Gojek¹⁷, which, in its current form, can very well be conceptualized as a financial technology firm translating various webs of payments, lending¹⁸ and accumulation¹⁹ 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

¹⁷ 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>

¹⁸ “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>

¹⁹ 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>

capital. This financial phenomenon ends up legitimizing ‘the informal’ as vital public infrastructure (Simone, 2014) 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 main incentives and methodologies of the surging financial influx into popular economies.

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 zero²⁰. 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 exchange traded funds’²¹ and venture capital investments into large scale digital platforms.

²⁰ “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>

²¹ BRICS is a wrapper term to market the ‘emerging economies’ of the 2000s to a wide audience of wealthy investors in North America, Western 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 world²². 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 capital²³. 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 liquidity²⁴.

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 Gojek 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)²⁵. 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 crisis²⁶. Still unprofitable and largely dependent on foreign capital to keep its operations running, one can argue Gojek 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

²² 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>.

²³ Yao, L. (2020). It's Not a Venture Bubble (With Charts!). Retrieved October 10, 2020, from https://www.whiskeypicnic.com/4-venture-pricing/?utm_source=Kauffman+Fellows+Journal

²⁴ “SoftBank Group could finally become a beneficiary of the Bank of Japan's corporate bond buying if the central bank drops a long-held wariness toward Masayoshi Son's heavily indebted tech firm” — Sano, H. (2020, April 28). SoftBank could benefit as BOJ expands corporate debt buying. Retrieved October 10, 2020, from <https://www.reuters.com/article/health-coronavirus-boj-softbank/update-1-softbank-could-benefit-as-boj-expands-corporate-debt-buying-idUSL3N2CH158>

²⁵ 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/>

²⁶ “Gojek said PayPal also participated in its current funding round along with Facebook. Investments from the two U.S. tech giants as well as other investors will help Gojek ramp up its payments and financial services in the region, the company said.” — Choudhury, S. R. (2020, June 03). Facebook, PayPal invest in Indonesia's ride-hailing firm Gojek. <https://www.cnbc.com/2020/06/03/facebook-invests-in-indonesia-gojek.html>

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 Gojek is as precarious as its labour base.

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 investment²⁷. 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 (Yean, 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 approximately \$5 billion USD of investments²⁸ which have been primarily deployed to metropolitan Indonesia within the last 5 years (a figure that is comparable to Indonesia’s yearly FDI inflows²⁹), Gojek 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.

²⁷ BPKM, “Daftar Negatif Investasi di Indonesia”, 2017. — <https://www5.investindonesia.go.id/id/artikel-investasi/detail/daftar-negatif-investasi-di-indonesia>.

²⁸ Gojek - Crunchbase Company Profile & Funding. Retrieved October 09, 2020, from <https://www.crunchbase.com/organization/go-jek>

²⁹ 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>

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’³⁰, small neighbourhood grocery shops that dot any urban zone since the Byzantine period³¹. 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 funded³², ambitious Turkish delivery

³⁰ 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 there were more than 240,000 bakkal in Turkey in 2010. — (2018, June 17). ‘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>

³¹ “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).

³² 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>.

startup Getir³³. 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 *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 Getir³⁴, 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 minutes³⁵. Similar to the way Gojek centralised the traditionally dispersed nodes³⁶ of *pangkalan ojek*³⁷, Getir effectively centralised³⁸ the *bakkal* model and refashioned it as an instant delivery logistics model. This process of digital platformisation coupled with a widely recognizable brand³⁹ 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 centers.

³³ 'Bring' in Turkish

³⁴ "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).

³⁵ 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).

³⁶ 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 increasing their traditional operational zone of a few hundred meters (average eye-sight of a passer-by) to an entire urban zone. See Appendix for Gojek deliverymen taking orders from street food stall in Java, taken during my fieldwork in Jogjakarta during early 2020.

³⁷ Motorcycle taxi bases in Bahasa Indonesia, a common signage in urban Indonesia to this day.

³⁸ 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.

³⁹ Getir is still unprofitable due to its massive marketing budgets

This 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, these popular innovations allow us to glimpse into the capabilities, needs and solutions of the general public itself. This is a technological public, a collective realm different from an imagined nation or a globalized market. To be able 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.

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