

Turf wars: The livelihood and mobility frictions of motorbike taxi drivers on Hanoi's streets

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Abstract: *In Vietnam's capital city Hanoi, the growing popularity of application based (app-based) motorbike taxis has offered many inhabitants new opportunities to pursue a mobile livelihood with ride-hailing platforms. Nonetheless, as this influx of app-based drivers has hit the city's streets, specific livelihood and mobility frictions have emerged, notably with informal, 'traditional' motorbike taxi drivers, or xe ôm. In this paper we analyse these evolving sites and moments of friction and their impacts on driver livelihoods and mobilities for both driver groups. We draw conceptually on debates regarding mobility, platform economies, and urban livelihoods, while specifically interrogating the concept of friction to highlight three possible analytical applications. Methodologically, we interpret static and ride-along interviews completed with over 130 drivers. We highlight a range of tactics 'traditional' and app-based motorbike taxi drivers have employed to respond to rising frictions, defend their 'turf', and maintain their street-based livelihoods. Driver responses reveal differing access to distinctive forms of social capital and social networks, and contrasting levels of agency regarding their mobilities. By conceptually teasing apart the notion of friction, we wish to expand and deepen understandings of the experiences of vulnerability, precarity, and other impacts of platformisation for different motorbike taxi driver cohorts.*

Keywords: *friction, mobility, platform livelihoods, urban informality, Vietnam*

Introduction

Across the Global South, many urban informal livelihoods, including driving motorbike taxis or delivering food and other goods, are now being modified and reorganised by new platform technologies, a key component of the platform economy (Gooptu, 2013; Surie and Koduganti, 2016; Peters, 2020; Surie, 2020). With the rise of the platform economy, researchers have begun to examine livelihoods that are 'mediated by the infrastructure and accompanying logic of digital platforms' (Donner *et al.*, 2020: 2). It has been argued that the platform economy provides important new opportunities for members of traditionally marginalised populations, such as women drivers in the male-dominated informal transport sector (Hamal and Huijsmans, 2022; Hiriyur, 2022), socially excluded rural-to-urban migrants and informal settlers (Jack, 2020; Keskinen *et al.*, 2022), and those with no or limited formal education (Graham *et al.*, 2017). Nonetheless, a number of barriers to entering

such livelihoods persist, including the need for specific physical and technological assets such as a smart phone and/or internet access (Wood *et al.*, 2019), a vehicle, for instance a motorbike or tuk-tuk (Budiman, 2020; Jack, 2020), digital literacy (Kumar *et al.*, 2018; Anwar and Graham, 2020), and perhaps even access to an 'electronic wallet' (Hiriyur, 2022). Moreover, studies focusing on the 'platformisation' of marginal livelihoods highlight the vulnerable and precarious conditions of platform workers (Surie and Koduganti, 2016; Graham, 2020).

Although such work starts to shed light on the possibilities and constraints brought about by the emerging platform economy in Global South cities, far less has been written about the livelihood and mobility frictions arising *during* the 'platformisation' of such livelihoods. To date, only a few studies have focused on these social and livelihood dynamics, such as Peters (2020) and Frey (2020) studying social conflicts among *ojek* and *Gojek* drivers in Indonesia and Chen (2018) examining social

and labour unrest among Didi Chuxing ride-hailing drivers in China.

In Southeast Asia, the platform economy has made important advances within the transportation sector, with ride-hailing apps for both motorbikes and car taxis expanding the urban mobility options for millions of residents (Chalermpong *et al.*, 2022). In Hanoi, the capital of the Socialist Republic of Vietnam (popn. nearly 8 million), and the focus of our study, the public transit network continues to be severely inadequate to meet residents' mobility demands. To partly fill this mobility gap, motorbike taxis – *xe ôm* – emerged in the mid-1980s as an informal transportation mode. This two-wheeled taxi flourished in Hanoi following a boom in motorbike imports after *Đổi Mới* (economic liberalisation; Pham, 2016). These days, *xe ôm* drivers often have an edge over public transport and automobile taxis as they can easily navigate the maze of narrow alleyways, paths, and shortcuts around the city (Fig. 1). This manoeuvrability allows *xe ôm* drivers to provide a fast and flexible door-to-door service, even during chaotic rush hours (Vu and Mateo-Babiano, 2013; Bray and Holyoak, 2015; Turner and Ngo, 2019).

More recently, ride-hailing platforms have made their presence felt in important ways in Vietnam's main cities, including Hanoi. Since 2015, a growing number of Hanoi residents have chosen app-based motorbike taxi rides instead of *xe ôm* to transport themselves and/or



Figure 1. A motorbike taxi driver trying to wriggle his way out of a narrow path on a street in Hanoi. Photo credit: Binh N. Nguyen. [Colour figure can be viewed at [wileyonlinelibrary.com](https://onlinelibrary.wiley.com/doi/10.1111/apv.12773)]

goods around the city. Ride-hailing platforms, such as the Singapore-based Grab or the Indonesian-owned Gojek, have rapidly gained popularity in Hanoi (Hansen *et al.*, 2020; Chalermpong *et al.*, 2022). These ‘tech’ motorbike taxis have attracted a growing clientele with competitive prices and promotions, convenient driver dispatch systems, and the integration of multiple services, from food and parcel deliveries, and online grocery shopping, to digital banking, in one single platform (Nguyen-Phuoc *et al.*, 2020).

Nonetheless, both ‘traditional’ *xe ôm* and app-based motorbike taxis operate in a legal grey zone, without official recognition from Hanoi’s transport authorities (Truong, 2021; Chalermpong *et al.*, 2022). This creates a complicated context when drivers of these different mobility options clash. As frictions and tensions arise over access to specific sites, passenger loyalty, and who has the greater right to make a livelihood on the city’s streets, disputes tend to be solved informally. As our research will show, such ‘solutions’ are ranging from overt physical violence, to increasing reliance on group support to claim a ‘space’, to more creative or subtle resistance tactics. Against this backdrop, our paper aims to investigate the livelihood and mobility frictions emerging between *xe ôm* and app-based motorbike taxis drivers in Hanoi and to better understand the tactics they draw upon to maintain their livelihoods. We identify different forms of ‘frictions’ among these drivers and examine how drivers attempt to resolve these tensions and conflicts, notably by relying on different spatial and mobility tactics and tapping into specific social networks.

Next, we outline our conceptual framework building on debates from the new mobilities paradigm, and platform economy and urban livelihoods literatures. We then contextualise our study within Hanoi’s mobility landscape, before briefly outlining our methods. In the results section, we explore different livelihood options that motorbike taxi drivers have chosen, focusing on the forms of capitals they require, and how drivers construct their daily livelihood and mobility patterns. This serves as an entry point for our analysis of the sources, sites, and moments of frictions facing traditional and app-based motorbike taxi drivers following the introduction of ride-hailing platforms. We investigate

the impacts of these frictions on drivers' mobilities and livelihoods and tease out their coping mechanisms and adaptations to these sticky encounters. We conclude by reflecting on the support (or lack thereof) from both local transport authorities and ride-hailing companies for motorbike taxi drivers to overcome current and imminent frictions.

Conceptualising mobility frictions, platform economies, and urban livelihood capitals

Conceptually, this paper draws on debates that have emerged from the new mobilities paradigm, especially concerning mobility frictions, discussions regarding ride-hailing digital platforms within the emerging platform economy literature, and considerations of the different capitals supporting urban livelihoods. From the early 2000s, the new mobilities paradigm emerged as a way to understand how the contemporary world is being (re)shaped by complex everyday movements across diverse forms, scales, and speeds (Cook and Butz, 2019). Advocates for this paradigm expand the concept of mobility beyond its physical and material dimensions while also highlighting new forms of mobile lives, cultures, and identities (Cresswell, 2006; Hannam *et al.*, 2006). These aspects of mobility are also considered in connection with the politics, planning approaches, and physical infrastructures that govern and shape mobilities (Jensen, 2009; Cresswell, 2010; Elliot and Urry, 2010).

More specifically, mobilities scholar Tim Cresswell (2010: 21) has noted that 'the entanglement of mobility' can be examined through six elements, namely motive, velocity, rhythm, route, experience, and friction. Although wishing to take all these elements into account, we delve most deeply into the notion of friction, due to our focus on the nature of the conflicts between different road users, and we tease out three possible applications. First, friction can be understood as 'a force which works to stop or slow mobilities on the one hand and make the very fact of mobility possible on the other' (Cresswell, 2014: 109). Frictions are visible when a person experiences moments of stoppage, slowing down, or 'stubborn stickiness' as they travel through geographical space. For

example, Møller-Jensen (2021) focuses on the frictions women experience in Accra caused by traffic congestion and gendered confrontations while in transit. Second, and less tangible, friction is produced by different 'arrangements of power', and hence is a factor that contributes to the production of power asymmetries (Cresswell, 2014: 108). Through his observations at British airport checkpoints, Cresswell (2014) demonstrates how friction can be used as an instrument of control by the powerful to slow down the movement of non-European Union (EU) travellers, while facilitating the passage of EU citizens or first-class passengers. Third, we draw on Tsing's (2005) conceptualisation of frictions as moments of encounters between universal flows and the specificities of local context. These forms of 'frictions' constitute what Cresswell (2014: 112) calls the 'grip of worldly encounters'. Along these lines, researchers have begun to highlight the frictions generated when the assumed universality of platform-mediated logics, technology, and flows of capital interact with local social infrastructures (Peters, 2020; von Vacano, 2021), topography, tempo, and pace (Kasera *et al.*, 2016; Qadri, 2021), and incumbent actors on the streets of Asian cities (Kumar *et al.*, 2018; Jack, 2020). These three approaches to friction, analysing its visible, political, and spatially divergent characteristics, make it highly relevant for understanding the dynamics of mobilities and livelihoods of motorbike taxi driver groups in Hanoi.

The emergence of ride-hailing digital platforms is one example of what Urry (2000) refers to as 'new assemblages' of everyday mobilities of people, goods, and objects (see also Richardson, 2020; Stehlin *et al.*, 2020). These assemblages are created with the increasing interconnections possible due to networks of smartphones, telecommunication technologies, finance, and transport technologies (Brail, 2020). Yet, despite much 'techno-optimism' surrounding the platform economy discourse (Kesserling *et al.* 2020: 3), critical scholars are raising substantial concerns regarding the impacts of ride-hailing platforms on existing urban mobility networks, and on the livelihoods and well-being of those involved. These critics foreground the underexplored interactions between platforms and public transit (Suatmadi *et al.*, 2019),

the alteration of daily travel behaviours (Rizki *et al.*, 2021; Truong, 2021), and the (questionable) roles of platforms in achieving more inclusive and sustainable urban mobility (Stehlin *et al.*, 2020; Verlinghieri and Schwanen, 2020). Focusing on worker livelihoods and well-being, researchers highlight the exploitative practices of many platform companies, and the resulting precarity and vulnerability of platform workers (van Doorn, 2017; Surie, 2020; Zhou, 2022). However, researchers are beginning to better understand the tactics employed by app-based workers to improve livelihood conditions and resist platform algorithmic control and governance (Chen, 2018; Frey, 2020; Qadri, 2021). As we examine the rise of ride-hailing platforms in Hanoi, we draw on these debates and their consequences to date.

Finally, we turn to urban livelihood literature to inform our analysis of the practices and tactics employed by motorbike taxi drivers as they construct their livelihoods. These livelihoods are underscored by different combinations of human, natural, financial, physical, and social capitals (Ellis, 2000; de Haan and Zoomers, 2005; Turner, 2014). A specific focus on livelihoods in urban locales has highlighted how human and social capitals can play important roles in both crafting urban livelihood strategies and in shaping responses to livelihood shocks and constraints (Rakodi, 2002; Staples, 2007). At an individual level, human capital, including formal and informal education levels, specific skills, and health status, directly affect livelihood options and activities (Rakodi, 2002). Human labour is often the only type of capital that lower socio-economic or otherwise marginalised individuals can exchange for income in Global South cities, unlike in a rural setting where natural assets, like land or timber, can more often be sold if needed (Brown and Lloyd-Jones, 2002).

Social capital refers to ‘the resources embedded in one’s social network and how access to and use of such resources benefits the individual’s actions’ (Lin, 2001: 56). These relationships between individuals and their families, friends, neighbours, and others in the community and beyond can be further categorised into bonding, bridging, and linking social capital. ‘Bonding’ social capital refers to close social ties among families, friends, or close-knit

community members sharing similar identities based on ethnicity, race, religion, gender, and/or socio-economic status (Woolcock, 2001). Meanwhile, ‘bridging’ capital relies on more heterogeneous intercommunity ties and connections. At times this can be more helpful than bonding social capital, especially to secure new employment opportunities or to access a more diverse resource pool (Turner and Nguyen, 2005). Finally, ‘linking’ social capital refers to ‘resources, ideas and information that are gained from formal institutions beyond the immediate community’ (Turner and Nguyen, 2005: 1696). Given the institutional context Hanoi’s motorbike taxi drivers are operating in, as briefly outlined next, we want to carefully tease out the forms of human and social capital that help shape motorbike taxi livelihoods and that might influence drivers’ responses to frictions, especially as ride-hailing platforms have entered the mobility scene.

Context: Hanoi’s urban transformations and mobility landscape

Historically, Hanoi has witnessed different urbanisation waves, with the most recent being initiated by *Đổi Mới* in the mid-1980s (Fanchette, 2016; Labbé, 2021). The result of these waves is a mixture of spontaneous and planned urbanisation, creating an urban road network with no coherent layout. At the heart of the city, the historical Old Quarter is connected by a dense maze of narrow streets and alleyways, with shops and stores fronting traditional, slender ‘tube houses’ (Fanchette *et al.*, 2016; Tran, 2019). This dense urban form has hosted a thriving variety of small-scale enterprises and a bustling street economy for centuries (Turner, 2009). During the strict socialist period of the late 1950s to early 1980s, Soviet-style housing units were built, some of which still house large families crowded into poorly maintained small units, while others have been demolished entirely (Drummond and Nguyen, 2020). More recently, as the city has expanded rapidly from the late 1990s, spontaneous and informal housing developments have left little land for the planned construction of roads (Huynh and Gomez-Ibañez, 2017).

Nowadays, when viewed from above, Hanoi’s contours are increasingly defined by

modern ring roads, urban expressways, and multi-lane streets. Yet, as we 'zoom in', the mosaic of many city districts remains a tangled web of narrow roads and small alleyways connecting densely populated neighbourhoods. Given this urban form, Hanoi residents maintain a strong reliance on motorbikes. Indeed, Khuat (2006) estimates that more than two-thirds of Hanoi's population reside in neighbourhoods accessible only by two-wheeled vehicles or on foot. The motorbike is also crucial to the livelihoods of thousands of urban inhabitants, including street vendors, market merchants, delivery drivers, and motorbike taxi drivers, who rely heavily on motorbikes for their daily mobilities and transactions (Jamme, 2019; Turner and Ngo, 2019).

Nevertheless, motorbike mobilities are increasingly controlled, policed, and restricted by transport authorities, and further curtailed by the growth in automobiles (Truitt, 2008; Tran, 2019; Jamme, 2022). Aiming to transform the capital city into a 'modern metropolis', Hanoi's transport authorities often deem motorbikes as unfit, backwards, and 'the enemies of urban traffic' (Tran, 2019: 90). For some residents, especially among upper-middle and high-income groups, these negative associations also legitimise plans of the local transport authorities to ban motorbikes from central districts by 2030 (Hanoi's People Committee, 2017; VOV, 2021). Meanwhile, cars have become increasingly desirable as a means of transport and a status symbol for these same groups (Hansen and Nielsen, 2019). This growth of cars has led many commentators to predict that 'motorbikes might soon become a memory of the past', as driving this two-wheeled vehicle becomes 'increasingly uncomfortable, difficult, and dangerous' (Jamme, 2022, see also Truitt, 2008, Nguyen, 2020).

At the street level, vulnerable road users, such as street vendors and drivers of 'improvised-looking' motorbikes, are frequently targeted for random checks by transport police, often with demands for bribes (Carruthers, 2018: 17; see also Peters, 2012, Turner, 2020). These traffic police (*cảnh sát giao thông*) are widely recognised as being notoriously corrupt, commonly regarded as 'an extension of state oppression and corruption' (Crook, 2014: 18). It is partly due to this lack of trust in authorities to help when conflicts and tensions arise between

road users, that residents frequently take matters into their own hands. This includes when conflicts occur between *xe ôm* and app-based motorbike taxi drivers as analysed shortly.

Methods

This paper draws on interviews with 133 motorbike taxi drivers in Hanoi, whom we group into three categories. First, 'traditional' *xe ôm* drivers (78 interviewees), are independent and informal workers. Second, app-based motorbike taxi drivers (50), are associated with one of the major ride-hailing platforms operating in the city, such as Grab, GoJek, or Be. Third, 'hybrid' drivers (5), are registered drivers of ride-hailing platforms but also continue to pick up customers without the application at other times, similar to 'traditional' *xe ôm* drivers.¹ Among our driver interviewees, the majority were men with only eight women, reflecting the male-dominated nature of these livelihoods (see also Karis, 2013; Turner and Ngo, 2019).

Interviews were conducted in two phases, with different drivers recruited in each phase. Phase one occurred between 2016 and 2017 when ride-hailing platforms had just taken off in Hanoi, with interviews completed by the second author and their Hanoi-based research assistant. Phase two was completed by the first author, a Hanoi resident, between 2020 and early 2021 when ride-hailing motorbike taxis and platforms had grown significantly and become omnipresent on the city's streets. All these interviews were semi-structured, with themes covering driver background, livelihood motivations and approaches, daily mobility challenges, and related coping mechanisms and tactics. These longitudinal data, spanning 5 years, have allowed us to observe the evolution of frictions existing among different motorbike taxi driver cohorts and their adaptations over time.

We also completed 10 ride-along interviews with both *xe ôm* and app-based drivers. Such move-along methods have proven highly effective for studies of mobile livelihoods (Rosenblat, 2018; Sopranzetti, 2018; Zuberec and Turner, 2022). During these interviews, we took motorbike-taxi trips while carrying out

‘on-the-move’ conversational interviews with our drivers. These covered themes such as driver decision making, tactics and mobility patterns, interactions with and reactions to other transport users, and knowledge of surrounding streetscapes.

Xe ôm and app-based driver livelihood pathways, daily decisions, and mobilities

Differing livelihood requirements and capitals

Driver interviewees revealed that different livelihood capital requirements – especially social and human capitals – were important for them to enter this employment option. Among our interviewees, ‘traditional’ xe ôm drivers were usually Hanoi residents or long-term migrants from neighbouring provinces, aged in their 50s and 60s. On average, they had more than 15 years driving experience when interviewed. For these drivers, starting their career and securing a ‘waiting spot’² on the city’s streets had often required substantial time – for some over a year – of cultivating social connections, with this often considered the most challenging element of becoming a xe ôm driver. To secure such a spot, drivers explained that if fortunate, they might have been offered to share with an established driver (often from the same rural family village, or another social connection). In other cases, xe ôm drivers capitalised on ‘bridging’ social capital to negotiate with a local shop or enterprise owner for a waiting spot in front of their business. Different forms of social capital were thus important entry assets for this driver cohort.

Other xe ôm drivers established their operation base in their own residential neighbourhood to capitalise on existing connections with friends and neighbours to secure a waiting spot and regular customers. Working in one’s own neighbourhood was also beneficial if the driver had a positive pre-existing relationship with local authorities and police, helping to reduce harassment or bribes. A traditional driver with 10 years’ experience explained:

I live near here so it’s a convenient spot for me. I’ve been here since I started driving. Normally, I’ll take regular customers, like people

living around here or from this apartment building [a 17-storey apartment building nearby]. I mostly drive my regular customers now because Grab drivers attract all the others.

Migrant xe ôm drivers most commonly relied on their hometown connections to find a waiting spot and to ‘learn the ropes’ in the highly competitive xe ôm business. One xe ôm driver from Nam Định Province recounted how he secured his waiting spot in his initial days in the city:

If you want to wait here, you have to know someone who brings you here. One of my nephews worked as a xe ôm driver. He stood here before and told me about this place. Then I brought my motorbike and waited out here with him. It took me about a month to get used to everything, to this job.

Counting on social networks linked to one’s hometowns common among migrant informal labourers, such as street vendors, porters, or maids, to find employment and ‘learn the ropes’ upon their arrival in Hanoi (Turner and Schoenberger, 2012; Karis, 2013; Labbé *et al.*, 2022). However, appropriating heavily contested public space in Hanoi for one’s own business remained a challenge for xe ôm drivers. One hybrid driver cautioned that: ‘If I’m not careful, if there’s already other drivers waiting at the new spot, I might step on their feet. Then, things can get really complicated.’

In comparison, for app-based drivers, the capital entry requirements to start working for a platform were less complex, and we found no evidence of important levels of social capital being required. Aiming to grow their user network and satisfy rising demand, ride-hailing platforms actively recruit new drivers who meet minimum requirements. Although a small number of experienced xe ôm drivers had switched to these platforms, the majority of the app-based drivers we interviewed were either university students, new graduates looking for employment, or young migrant workers, with the average age being 30. These app-based drivers were predominantly men, despite a small number of young women beginning to try this employment option. Although a couple of app-based driver interviewees explained that they followed a friend’s guidance as to how to register as a driver, the

vast majority explained that there was an abundance of information provided by the platform companies or available on social media for new drivers. Interviewees noted that a new app-based driver only needed to show their motorbike licence, and have a bank account, ID card, a clean legal record, and a smartphone, to start working for these platforms. As one young Grab driver exclaimed: 'It's nothing too complicated'.

Although motorbike driving skills remain essential for all motorbike taxi drivers, smartphone and mobile internet literacy were two additional forms of human capital that app-based drivers needed to master for their platform-based livelihoods. The app-based driver interviewees were heavily dependent on their smartphones and this literacy to communicate with customers, navigate the city with Global Positioning System (GPS) technology, and manage their driver profiles, payments, and bonuses. Meanwhile, these mobile technologies were often important entry barriers for older traditional drivers who had considered app-based driving. Older drivers typically lacked the knowledge of how to operate a smartphone and fairly commonly also had impaired eyesight. This combination prevented many from using smartphone applications and driving for these new platforms, as one 57-year-old *xe ôm* driver shared: 'My children told me to change to smartphone and GrabBike but my eyesight isn't good, so I can't use the smart phone.'³

Differing livelihood and mobility patterns

Besides different capital requirements, drivers also detailed a range of daily livelihood strategies and mobility patterns. Although some common themes emerged within each group, contrasts between the two groups also stood out. These contrasts are evident when we look at the daily mobility rhythms of drivers, and the differing levels of driver agency to control these (Cresswell, 2010). For example, the mobilities of app-based drivers were largely controlled by a platform algorithm, built around the logics of speed and instant response to customer demands. These drivers were also motivated by rewards and bonuses offered by the platform. Thus, interviewees noted that they often rushed from one ride to the next, trying to keep up with the reward scheme and earn as much as

possible, as quickly as possible. An app-based driver in his 30s working for Be – a Vietnamese ride-hailing company – detailed his fast-paced daily routine:

I try to achieve my daily target, about 400-500,000 *đồng* [USD17-21], as soon as possible. Then I go home to rest. I rarely stop on the street to take a break, for tea or other drinks. Normally, I just drive around until I have the next customer [...] It's better to drive as much and as fast as I can to make a few hundred thousand *đồng* and then go home.

This emphasis on speed and instantly responding to customer demands was even more evident among drivers who had understood the financial benefits of accommodating the rhythms of white-collar office workers. For these app-based drivers, their most intense work period was during peak office rush hours, namely early mornings and late afternoons. A Gojek driver shared his strategy to stay in tune with such rhythms:

In the morning, I often go to busy residential areas to pick up people going to work. After this peak hour, I move to business or office areas, near restaurants, or shopping malls where I can get lots of food and parcel delivery requests. Then, late in the afternoon, I wait near office areas to collect people going home from work.

Although accommodating these rhythms secures higher profits, it also leaves drivers exposed to mobility frictions caused by heavy traffic and rush hour congestion. As such, many drivers were caught in traffic for extended periods *en route* to picking up passengers or reaching their destinations, slowing both their mobilities and earnings. Interviewees also noted that local pollution from exhaust fumes could be rather overwhelming during rush hour traffic when hundreds of motorbikes and cars cross congested intersections at once. A few drivers even remarked that the constant 'buzz' of their mobile-app with new trip requests kept them so busy during peak hours, they had no time for bathroom breaks.

In contrast, many traditional *xe ôm* drivers we interviewed often *avoided* driving during rush

hour or declined customers heading towards congestion-prone areas. Unlike app-based drivers who often remained mobile to increase customer-matching opportunities, traditional drivers could choose to head back to their usual waiting spot between the rides that suited them. Without the pressures imposed by platform algorithms, traditional drivers thus displayed greater freedom to control their speed and rhythms (including deciding when to slow down or stop their working day) and to avoid certain frictions.

During one ride-along interview, a 65-year-old *xe ôm* driver added that besides avoiding the rushed rhythms embraced by many app-based drivers, he also chose to slow down and pace his individual rides:

Senior drivers like us often drive slowly. We can't go fast any longer, we tend to be more careful. We put safety first, rather than speed [...] If I have customers who ask me to go fast, like younger customers often asking me to go at 60-70km/h or so, I'll ask them to get off my motorbike and go with another driver. The streets are packed with traffic, so speeding at 70km/h is impossible for me.

Keeping these daily routines, priorities, rhythms, and concerns of different driver groups in mind, we now turn to focus on the sites and moments of friction that have arisen among the drivers.

Tracing livelihood and mobility frictions

Frictions start to simmer: Increasing competition among motorbike taxi drivers

It quickly became clear from our interviews that the initial sources of friction between traditional *xe ôm* and app-based drivers stemmed from specific efforts by ride-hailing platforms to disrupt customer expectations of motorbike taxi fares. Heavily subsidised fares and promotions have been common tactics exploited by platforms in Hanoi to grow their market share. This has included poaching customers from other platforms and from *xe ôm* drivers, as well as attempting to attract new customers to this mobility option. Together with the low entry barriers for app-based drivers discussed above, these pricing incentives allow platforms to

expand their networks of service providers and customers (Nowak, 2021). Although resulting in more affordable fares for customers, these strategies became a point of contention for *xe ôm* drivers, unable to compete with the discounts and promotions of ride-hailing platforms. One *xe ôm* driver with nearly 10 years of experience voiced these frustrations: 'When UberMoto and Grab started their businesses, we [*xe ôm*] lost many customers. If they have more customers, it means that we will have fewer customers ... But we cannot accept their fare – it's way too cheap.'⁴

More than half of the *xe ôm* drivers we interviewed reported losing customers and substantial income following the introduction of app-based motorbike taxis. A *xe ôm* driver with 18 years' experience lamented: 'It's getting more difficult now because of the new "tech" drivers. I used to make four to five million *đồng* [USD170-200] a month and put aside a bit after my expenses. Now, what I earn isn't enough for food'. Increasing economic hardships were most palpable among drivers who relied entirely on this occupation to support themselves and their families. A *xe ôm* driver, driving since 2007, had become extremely stressed about his family's situation:

Now GrabBike has increased sharply, so we [traditional *xe ôm*] are in a difficult situation trying to catch customers. Some drivers have this as their only job and have family already. If they can only make 100–200,000 *đồng* [USD5-8] daily, it's really hard to pay for rent and feed their children.

Turf wars heat up

Long before the arrival of ride-hailing platforms, *xe ôm* drivers had often informally organised themselves into groups at hotly sought-after locales around the city, in an attempt to protect their 'turf' and fend off newcomers. During our first fieldwork phase in 2016–2017, *xe ôm* drivers explained that this form of organisation was often rooted in mafia-like driver syndicates (Fig. 2). These syndicates oversaw and protected *xe ôm* operations and territory in exchange for monthly 'fees'. Standing near Yên Nghĩa long-distance bus station, a large station in south



Figure 2. A group of informally organised traditional *xe ôm* drivers located in front of a major hospital in Hanoi. Photo credit: Sarah Turner. [Colour figure can be viewed at [wileyonlinelibrary.com](https://onlinelibrary.wiley.com/doi/10.1111/apv.12373)]

Hanoi, a senior *xe ôm* driver explained these somewhat ‘shady’ operations:

If you work near this [bus] station, then you need to pay ‘operating fees’ (*tiền phé*) for people ‘running’ this station. Sometimes, you also need to buy motorbikes from them. If new drivers come here and pick up customers, these guys will chase them away or tell the drivers to go somewhere else to work.

With the arrival of app-based drivers, the situation at these key waiting areas became even more complex, with tempers flaring and violence escalating. Reports in formal and social media soon began comparing physical clashes between *xe ôm* and app-based drivers to gang violence. Verbal insults, stones, improvised weapons, and even handguns (tightly controlled in Vietnam) were reported being used in heated conflicts between new and old driver cohorts (Quynh Trang, 2017; Trong Trinh, 2017). A driver working for UberMoto revealed his fear of the underground operations protecting *xe ôm* ‘turf’: ‘We can’t stand at the corner of the street or bus station. If we do that, those mafia-like (*xã hội đen*) traditional *xe ôm* would “bite” us right away, or they’d request us to go away immediately. We can’t compete with them.’

Besides posing a direct risk to driver safety, threats of violence at these locales had induced new layers of mobility friction. This was especially the case for younger and migrant app-based drivers relying on GPS and Google Maps for navigation. Due to their limited experience

and time riding on Hanoi’s streets, it was difficult for them to ‘read between the lanes’ and decode the nuanced boundaries created by *xe ôm* drivers and the syndicates. New app-based drivers who naively or accidentally crossed these informal spatial boundaries and were chased away, said they tried to avoid the areas altogether or relocated themselves outside the purview of these syndicates. Other app-based drivers, who were more aware of these frictions, often had to re-negotiate with customers to change pick-up or drop-off points if these were near conflict-ridden locations, despite the negative consequences for their app-based ratings, rewards, and potential income.

Furthermore, the mismatch between the algorithm-based geographies and socio-spatial realities on the streets left app-based drivers exposed to other forms of subtle push back from more experienced *xe ôm* drivers. Traditional drivers explained to us – often with a mischievous grin – how they would point inexperienced, ‘out-of-province’ app-based drivers in the wrong direction when asked for directions. This might be the wrong direction to reach a customer, the wrong way along a one-way street, or pointing them to take streets with a high number of transport police, notorious for their bribery. A *xe ôm* driver shared how these tactics played out around Hanoi Railway Station:

When many GrabBike drivers ask for directions to the train station, *xe ôm* drivers just tell them go straight ahead into a one-way street [the wrong way]. Some ‘tech’ drivers don’t know, so they drive headfirst down the one-way section of Lê Duẩn street. Easy 1–2 million fine [USD50–80] for the police. Even if they beg for ‘leniency’, they’d still have to ‘bribe’ the police at least 100–200,000 *đồng* [USD5–8] [*chuckles*].

Driver responses, coping mechanisms, and compromises

Although spatial conflicts between drivers continue at key sites around the city, we have observed their gradual decline, as both *xe ôm* and app-based drivers have slowly adapted to and reduced these livelihood and mobility

frictions. During our second phase of fieldwork, many app-based driver interviewees noted that they had become more aware of the ambiguous demarcations of *xe ôm* drivers' turf, and expressed more respect toward senior traditional drivers and their territories. A GrabBike driver since 2017 explained:

Here at Yên Nghĩa bus station, if you go and wait over there, which is the traditional drivers' territory, then they'd tell you to leave. Drivers waiting there have to pay 'operating fees' to the station to pick up customers [gesturing to a site close to the bus station building entrance, within the station's compound]. That's the rule here. Otherwise, if the customers walk out of the station [compound], they can go with whoever they want. Grab drivers like me often only wait just outside the station [compound].

Similar demarcations of territory were clear at other inter-provincial bus stations around the city, such as Mỹ Đình Station (Figs. 3,4).

Although we found that 'bonding' social capital was far less crucial for app-based drivers to kick start their driving careers than for *xe ôm*, some app-based drivers had begun to forge alliances among themselves to protect one another in contentious sites across the city. An app-based driver explained that 'Grab drivers can also stand and wait for customers at the bus stations, but they often stand in groups in case the "traditional" fight them, so they have someone to help' (shown in Fig. 4).

With their round-the-clock online presence, some app-based drivers had also organised into



Figure 3. A traditional *xe ôm* waiting inside the compound at Mỹ Đình bus station. Photo credit: Sarah Turner. [Colour figure can be viewed at [wileyonlinelibrary.com](https://onlinelibrary.wiley.com/doi/10.1111/apv.12373)]

groups on social media platforms and drew on what we have termed 'virtual bonding social capital' to share information regarding conflict-prone locations, new platform policies, or emergency services for drivers. Interviewees noted that these driver-led online groups served as important social networks for novice drivers to learn from their more experienced peers. This was especially the case for young migrant drivers who, as noted earlier, often lacked essential social connections and knowledge of different driver territories in the city. A young app-based driver from Hòa Bình Province with only 1 month driving experience confirmed: 'I've never run into problems with traditional drivers myself, but I heard from others [via social media] that it can be problematic for "tech" drivers to hang around near coach stations, so it's best to avoid these places.' These social media platforms were also used by drivers to voice concerns or to protest platform policies, particularly those that affected driver earnings, such as adjustments to commission rates and temporary surcharges (see for example Buckley, 2020, 2022). However, such protests had had little impact on the companies to date.

Meanwhile, traditional *xe ôm* drivers had also developed a range of approaches to overcome the frictions they faced at work. Although social networks with other *xe ôm* drivers and key local actors remained important to fend off app-based drivers encroaching upon their space, traditional drivers also relied on other tactics to maintain their livelihoods. For example, many had realised that their social connections and long-term neighbourhood relations could work to their advantage over app-based drivers. *Xe ôm* drivers explained that they had taken on, or increased, communal responsibilities in their residential neighbourhoods, such as helping to transport the elderly or children regularly and with discounts, or delivering neighbours' shopping while keeping an eye on neighbourhood security. Taking on these responsibilities not only provided additional income at times, but also helped drivers to retain their claims over specific public spaces.

Besides such social connections, *xe ôm* drivers sustained their livelihoods amid growing competition from app-based drivers by adopting a different mobility strategy. As noted earlier, free from the logics of speed and instantaneity imposed by the platforms, *xe ôm* drivers



Figure 4. GrabBike drivers waiting outside Mỹ Đình bus station compound. Photo credit: Sarah Turner. [Colour figure can be viewed at [wileyonlinelibrary.com](https://onlinelibrary.wiley.com/doi/10.1111/apv.12373)]

demonstrated far more autonomy to decide their speed or when to take a break. This had not gone unnoticed by certain customers, especially parents needing a careful driver to ferry their children to and from school, and the elderly. Adopting a slower rhythm, these drivers maintained the trust and loyalty of a segment of motorbike-taxi users who shied away from the fast and often fairly aggressive driving styles of many young app-based drivers. A long-term *xe ôm* driver in his 70s proudly shared:

There're still many customers who stick with traditional *xe ôm* because they see that young drivers nowadays drive too fast, too recklessly ... They're afraid of young drivers who always rush through packed traffic. Senior drivers like me often drivemore carefully.

Discussion: The benefits and pitfalls of urban livelihood platformisation

As different ride-hailing platforms compete for market leadership in the Global South, the entry barriers for app-based drivers to enter motorbike

taxi livelihoods have fallen, resulting in these barriers being even less stringent than those required for 'traditional' informal drivers at times (Kibaroglu, 2021). The 'platformisation' of the informal transport sector has opened up new flexible income-generating opportunities in cities such as Hanoi, where hundreds of recent rural-to-urban migrants and young students have jumped at the opportunity to become app-based motorbike taxi drivers. This recent influx of new drivers on Hanoi's streets, coupled with heavily subsidised fares and promotions offered by the platforms, has resulted in growing competition and substantial livelihood challenges for established traditional *xe ôm* drivers. As verbal and physical conflicts have broken out at key sites between 'traditional' and 'tech' drivers, we have observed the mobilities of new app-based drivers being altered, interrupted, or completely halted as they attempt to move through and negotiate their access to these locales.

Returning to our three possible conceptual applications of friction, we noted that a range of observable frictions impacting driver velocity, rhythms, and routes, were intimately tied to social norms and other interconnecting frictions,

particularly the underlying organisation of traditional motorbike taxi livelihoods, differing levels and forms of social capital, and the complex informal processes of appropriating public space. With the rise of platform-mediated motorbike taxis, *xe ôm* drivers expressed strong resentment against the new flock of app-based drivers increasingly ‘trespassing on their turf’. For other street-based informal livelihoods in Hanoi, such as street vending, appropriating public spaces like streets or sidewalks has long required careful negotiations (Turner and Schoenberger, 2012; Eidse *et al.*, 2018). Traditional *xe ôm* drivers similarly drew on a range of tactics and carefully cultivated social capital connections to secure and protect their claims over specific public spaces as waiting spots, working hard to legitimise their presence on the city’s streets. Not surprisingly therefore, *xe ôm* drivers either subtly or openly resisted new app-based driver competitors.

Second, by juxtaposing the livelihood and mobility experiences of *xe ôm* and app-based drivers, we identified a further range of frictions intimately connected to different ‘arrangements of power’ (Cresswell, 2014: 108). App-based drivers, with their movements governed by platform algorithms, had limited agency to regulate their own mobilities and rhythms at work. This left them exposed to a range of mobility frictions as they attempted to navigate traffic-packed streets during rush hours and accepted as many customers as possible. Meanwhile, *xe ôm* drivers retained a greater degree of freedom to choose when to slow down or even stop, allowing them to avoid a range of frictions, including Hanoi’s traffic chaos at peak hours. With more control over their mobilities and rhythms, *xe ôm* drivers also maintained the trust of regular customers, and managed ‘to conceptualize livelihood differently, [and] alternatively to the logic of speed’; a logic imposed by ride-hailing platforms on app-based drivers (Vannini, 2014: 117). This limited agency found among app-based drivers reflects similar finding by Surie (2020: 92) regarding ‘an unequal [power] balance’, produced by the diminishing ability of workers to negotiate their fares and services with consumers after the platformisation of urban marginal livelihoods.

Third, we highlighted the frictions that have emerged as abstract flows of platform capital, technology, and governance ‘touch down’ on

Hanoi’s streets. Besides producing challenges for app-based driver mobilities, these abstract frictions exacerbated the tensions and conflicts already present in *xe ôm* livelihoods. Although platform algorithms and navigation systems were often essential to guide app-based drivers from point A to point B, relying solely on these technologies did not help them avoid sticky encounters with *xe ôm* drivers, or circumnavigate Hanoi’s notorious traffic jams. This reflects similar situations beginning to be observed elsewhere in Southeast Asia where ride-hailing platforms are competing with more established, informal transport options. Studying Gojek drivers in Indonesia, Qadri (2021: 33), for example, noted that ‘the assumptions underlying Jakarta’s mobility platforms, borrowed directly from Silicon Valley, began crumbling [due to] crushing traffic and inaccurate GPS, [and] tensions on the roads with incumbent actors’. These emerging experiences of ride-hailing drivers in the region resonate with Tsing’s (2005) conceptualisation of frictions as encounters between universal flows and the specificities of local conditions, including existing social, livelihood, and mobility relations and norms.

Concluding thoughts

The wide range of frictions that we have distinguished above highlights the disruptions that have occurred – and continue to occur – as ride-hailing platforms enter the milieu of urban informal employment in cities across the Global South. The interventions of ride-hailing platforms into incumbent informal mobility systems have led to the emergence of nuanced layers of conflicts, tensions, and frictions. Within Southeast Asia’s urban context, research has often focused on abrupt changes to the organisation of motorbike taxi industries either due to changes in policies or dynamics within the informal sector (Frey, 2020; Sopranzetti, 2021; von Vacano, 2021). Our research expands on such work by illuminating not only the specific moments and sites, but also the politics and relations, and the spatially divergent characteristics of frictions that have been emerging for the mobilities, livelihoods, and tactics of both traditional *xe ôm* and app-based drivers. By

exploring these interconnected frictions, we have added ethnographic evidence to mobility scholar suggestions that the anticipated universality of platform-mediated mobilities is being carefully and oft-times innovatively contested at local sites of interaction (Chen, 2018; Qadri, 2021; von Vacano, 2021). Moreover, we have illustrated the specificities and implications of local context, including migrant labour flows into Hanoi, the city's chaotic traffic, the spatial distinctiveness of small alleyways and streets, and the frequency of 'irregular' traffic police negotiations. This underscores how a detailed understanding of place can result in a more thorough comprehension *and* appreciation of how the logics of abstract platform capital play out on the ground to create distinctive frictions and livelihood tactics.

Returning to Hanoi's streets, it became clear that in attempting to overcome a number of these frictions, both *xe ôm* and app-based drivers had been left to fend for themselves and find innovative solutions. Traditional *xe ôm* drivers continued to draw on their strong social capital connections, both bonding social capital with neighbours and friends, and bridging with local shop/enterprise owners and officials. These ties and networks helped them maintain and enhance their spatial claims and regular customer base. Meanwhile, app-based drivers noted the growing importance of online communities for their platform-based livelihoods. This virtual bonding social capital, formed through social media connections, allowed a number of app-based drivers to better understand local conditions and social relations on the streets, as well as to rally for support and protection from their peers if needed. In addition, this self-organisation among app-based drivers represented subtle resistance to the atomisation, individualisation, and disembeddedness from 'interpersonal trust, networks, state policies, and legal frameworks', often associated with platform-mediated livelihoods (Graham, 2020: 454; see also Rekhviashvili and Sgibnev, 2018, Wood *et al.*, 2019, Nowak, 2021).

The self-reliance that we noted among both groups of drivers calls attention to the lack of formal support these individuals could rely upon. Notably, no interviewees were able to describe to us or remembered any interventions by Hanoi's transport authorities, or by the management of different ride-hailing platforms, to

help alleviate the livelihood and mobility frictions that individual drivers experienced and continue to face. Ride-hailing companies failed to provide meaningful assistance or support to their drivers, despite a rhetoric of drivers being their 'partners' (Hansen *et al.*, 2020; Jacob, 2020). Motorbike taxi drivers, both *xe ôm* and app-based, thus had to be self-reliant, depending on their own informal social networks to cope with different frictions.

From a policy perspective, both traditional *xe ôm* and app-based motorbike taxi drivers find themselves marginalised by the Vietnamese state's current and future mobility agendas. This is despite the fact that the government has allowed the platform economy in the transportation and other sectors to thrive in Vietnam. The government also tends to celebrate platform economy initiatives as part of the modernisation of the country's urban (and rural) landscapes. Yet, the fact remains that motorbikes also remain targeted by state discourse as outdated and 'non-modern' (Turner and Ngo, 2019; Turner, 2020). As such, we are now witness to a curious combination of a looming motorbike ban in a number of Hanoi's central districts, paralleled with the raising popularity of ride-hailing motorbike taxis among many local residents, and the government's general promotion of the platform economy. In this evolving context, future research will continue to add insights into the transformations of motorbike-based livelihood strategies and frictions, creative mobility and spatial tactics, as well as the resilience of those who pursue mobile livelihoods.

Notes

- 1 The divisions between these groups of drivers can be rather fuzzy. From interviews we noted that some drivers shift between these modes for different periods of the year, during a single work week, or even during a work-day. For example, a traditional *xe ôm* driver might have a waiting spot near a university where he often gets requests from students. During university holidays, this stable flow of customers dries up, so the same driver switches on his ride-hailing application and works around the city. There are also traditional drivers who have tried the app-based options, but then reverted back to their informal ways of picking up passengers. The distinct categories we draw in our paper – created using filtering questions to determine the category a driver most regularly belongs to – help us to compare the

- experiences and tactics of different motorbike taxi driver groups.
- 2 Before the 'platformisation' of motorbike taxis, customers who wanted to hail a xe ôm typically had to go to a driver's usual waiting spot, often near a driver's home, at a busy intersection, or in front of a school, hospital, or bus station. These 'waiting spots' serve like 'stations' for xe ôm drivers. Xe ôm drivers continue this practice despite the growing popularity of platform motorbike taxis which allow a customer to be picked up at their door.
 - 3 Traditional xe ôm drivers, especially older individuals, often referred to impaired eyesight as the primary reason preventing them from using a smartphone and working for a platform, due to their inability to read the maps or text displays. Nonetheless, we are cognizant that this might also be an excuse to hide their reluctance to learn to use this new technology. Some drivers were also apprehensive about the possible increased risk of traffic accidents from using a smartphone while driving. This is a viable concern since Truong and Nguyen (2019) found phone use to be the main cause of traffic accidents among app-based drivers in Hanoi.
 - 4 Uber operated in Southeast Asia, including motorbike taxis, until 2018 when Uber's Southeast Asian operations were bought by Grab.

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