



**HAL**  
open science

## ”It’s a three-way ring”: e-hailing platforms, drivers and riders reshaping Accra’s mobility landscape

Paola Pasquali, Hadrien Commenges, Thomas Louail

### ► To cite this version:

Paola Pasquali, Hadrien Commenges, Thomas Louail. ”It’s a three-way ring”: e-hailing platforms, drivers and riders reshaping Accra’s mobility landscape. *Case Studies on Transport Policy*, 2022, 10 (3), pp.1743-1753. 10.1016/j.cstp.2022.07.005 . hal-03810333

**HAL Id: hal-03810333**

**<https://hal.science/hal-03810333v1>**

Submitted on 11 Oct 2022

**HAL** is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L’archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d’enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

## **“It’s a three-way ring”: e-hailing platforms, drivers and riders reshaping Accra’s mobility landscape**

Paola Pasquali\*  
Webster University  
East Legon, Accra, GH

Hadrien Commenges  
Pantheon-Sorbonne University  
UMR Géographie-cités  
Campus Condorcet, 93322 Aubervilliers Cedex, FR

Thomas Louail  
CNRS, Institute for Humanities and Social Sciences  
UMR Géographie-cités  
Campus Condorcet, 93322 Aubervilliers Cedex, FR

\*Corresponding author: pasquali.pao@gmail.com

### **Keywords**

e-hailing platforms, platform economy, urban governance, urban mobility actors, Accra.

### **Abstract**

E-hailing platforms are currently booming in many global South cities, often circumventing local transport regulations thanks to their status of technology company. Ghana’s capital Accra, where demand for reliable transportation is huge, is a typical example for such phenomenon. We present the results of an investigation intended to provide a multi-faceted account of how e-hailing platforms have blended into the system of actors who operate urban mobility in Accra. Building upon interviews conducted with a large variety of public and private actors – including e-hailing drivers, taxi drivers, customers, platforms employees, drivers’ unions representatives, local investors and regulators – we detail the conditions and consequences of their installation. We focus on three aspects: the adaptation of platforms to the Ghanaian context; the work conditions of e-hailing drivers in Accra and their agency; and the essential role of car owners to sustain the rise of platforms in Global South cities.

## Introduction

At first symbol of innovative urban transportation within some selected cities in the global North, e-hailing platforms<sup>1</sup> are now key mobility enablers in many African cities. The 2009 creation of the American tech company Uber in San Francisco marked the beginnings of a mobility practice as well as of a business model. Since then, e-hailing platforms have spread worldwide, through both Uber and the plethora of others similar companies which followed its creation. Uber first landed on the African continent in the city of Johannesburg, South Africa, in 2013 and has since then expanded to other African countries. In 2016, Uber began operations in Ghana's capital Accra, a rapidly urbanizing city characterized by high demand for urban mobility. Uber's entry in Ghana was soon followed by the arrival of other e-hailing companies, both foreign and local. Four years on, e-hailing is such a popular phenomenon that small economy cars in Ghana are often labelled as "Uber car", while "Uber driver" has become a popular job for dozens of thousands of (mostly) young men.

A stream of literature on platform work conceptualizes them as "institutional chameleons", highlighting platforms' multiple ways of operating and mingling with the regulatory institutions and the labour realities of a country (Söderqvist 2017). Their impact on work varies greatly across countries (Vallas and Schor 2020). While as a rule, e-hailing platforms' drivers are classified as independent contractors, this feature has been most challenging in the United States, where some welfare benefits are directly dependent upon employment status (Thelen 2018). In "larger welfare state" European states, Uber appears to pose less of a threat as far as existing employment statuses are concerned. The disruptive impact in European contexts has mainly concerned the traditional systems of urban transportation (Germany) and the tax base needed to feed the welfare state system (Sweden and Belgium) (Thelen 2018, Zanoni 2019). For some authors (Lakemann and Jann 2019), the arrival of e-hailing platforms in African cities might pave the way for greater formalization of labour, in contexts of high informality and lack of welfare safety nets. It should also be remarked that a number of national courts in the global North have been taking definitions over the last years, forcing Uber and other platform companies to acknowledge their drivers as regular workers.<sup>2</sup>

The algorithmic business model of e-hailing platforms heavily depends on a series of adaptations which are not only country-specific, but may also be specific to the city they operate in. The notion of "platform urbanism" has been recently coined by scholars to draw attention to the urban dimension of technology capital (driven by platform firms such as Uber), as well as the increasing centrality of platforms in urban governance (Barns 2020). The notion of platform urbanism is also invoked to shed light on "how digital platforms are intertwined, even symbiotic (or parasitic), with urban space and society – and the critical and uneven implications of that relationship" (Sadowski 2020: 5). This consideration resonates with another stream of literature on platforms, focusing on the uneven relationships that platforms entertain with their workers. A number of scholars has observed that digital technologies enable platform firms a greater control over workers than conventional firms (Rosenblat and Stark 2016; Rosenblat 2018; Lee et al. 2015). Due to their very design, platform technologies would be prone to confer all power in the hands of clients/employers, and weaken the prospects for collective action (Tassinari and Maccarrone 2020). Such analyses see platforms as "accelerators of precarity" (Schor and Vallas 2020), and the conditions of online drivers would be exemplary of a worldwide trend of precarisation of labour (Scholz 2016).

1 We prefer using the term "e-hailing" rather than "ride-sharing" because the latter is evocative of a driver going somewhere purposely with his/her own car and getting money to give a lift, which is rarely the case in the Ghanaian context, where most drivers provide e-hailing services as a full-time job and have to rent cars to operate.

2 Including the U.K., California, Italy, Netherlands.

However, let apart a few exceptions (Graham et al. 2017; Anwar and Graham 2020), studies of the impact on labour of e-hailing platforms have mainly focused on global North cities. Largely because of the deficiencies of urban transportation systems in cities of the Global South, e-hailing platforms have reaped huge success in many emerging economies. A number of works have documented the arrival of e-hailing platforms in Latin America (Goletz and Bahamonde-Birke 2021, Tirachini, and del Río 2019, Fielbaum and Tirachini 2021, Puche 2019). A growing body of literature is currently focusing on the African continent. Among these, some studies have focused on the perspective of customers, predominantly in South African cities (Giddy 2019 and 2020; Fenton et al. 2020; Simmons et al. 2019), but also in Ghana (Budu 2020).

In the Ghanaian context, scholars have focused on the disruptive effects of e-hailing platforms on local taxi services (Simmons 2018; Agyemang 2020), resonating with similar research in other African countries (Adebayo 2019; Marcano 2018). E-hailing platforms in Ghana have also been studied from the perspective of their societal impacts, improving passenger safety and security (Acheampong 2021). The impacts of platforms on job creation and work conditions for Ghanaians, are, however, still largely unexplored. This happens in a context where opportunities for formal work are hard to come by, with some estimates quoting 80 per cent of employment in Ghana to belong to the informal sector (Obeng-Odoom 2011).

The existing literature on the matter of drivers' work conditions is mixed. For some, apart from creating job opportunities, the arrival of e-hailing platforms in African cities might enable e-hailing drivers to reap more benefits than traditional taxi driver jobs and more formal arrangements (Lakemann and Jann 2019). Looking at the Bangladeshi capital, Dhaka, Kumar et al. (2018) find instead that the arrival of Uber has reinforced existing modes of labour oppression and even introduced new ones. Carmody and Fortuin similarly suggest that the conditions of e-hailing drivers in Cape Town, South Africa, are worse off than those of other workers in the informal economy, where personal relationships predominate (Carmody and Fortuin 2020). On one hand, these studies echo the literature on platforms in cities of the global North, seeing platforms as accelerators of precarity and workers' exploitation through platform technology. On the other hand, few studies on gig work in African contexts have conversely demonstrated that platform work engenders new forms and practices of resistance to exploitation, both at the individual (Anwar and Graham 2020) and communal level (Pollio 2021).

This paper accounts for how e-hailing platforms spread into Ghana's capital, reconfiguring the local urban mobility landscape and drivers' work conditions. Section 1 provides an overview of the urban mobility landscape in Accra. Section 2 details the methodology and fieldwork. Section 3 presents our results. In Section 4, we discuss the contribution of these results to different research themes on the effects of e-hailing platforms in Global South cities.

## 1. Accra's urban mobility context

Ghana's capital city Accra is home to approximately 2.5 million inhabitants, but has an estimated daytime population of about 4.5 million people, with most commuters living in the suburban areas making up the Greater Accra region<sup>3</sup>. Most vehicles in Ghana are second-handed and imported, with an average age of between 10 to 20 years<sup>4</sup>. Before the arrival of e-hailing platforms, Accra's public transportation system was mainly composed of "trotro" (10–19-seater minibuses)<sup>5</sup>, taxi sharing and individual taxi hailing ("dropping")<sup>6</sup>. According to some 2017 estimates, 16% of passenger travels took place by private cars while 84% of passenger

3 Accra Metropolitan Assembly Annual Progress Report 2019

[https://ama.gov.gh/documents/Annual\\_Report\\_2019\\_CPF\\_20210715\\_13.06.24.pdf](https://ama.gov.gh/documents/Annual_Report_2019_CPF_20210715_13.06.24.pdf) Accessed 10/04/2021

4 Ghana's National Transport Policy, August 2020, p. 34

[http://www.mot.gov.gh/files/Final\\_Approved\\_Revised\\_National\\_Transport\\_Policy.pdf](http://www.mot.gov.gh/files/Final_Approved_Revised_National_Transport_Policy.pdf) Accessed 10/04/2021

trips in Accra were by public transport (56% by trotro, 15% by taxi)<sup>7</sup>. While trotro is the most popular form of transportation and provides affordable mobility, it has a reputation for poor safety standards and service quality (Esson et al. 2016, Acheampong 2021). Taxi services are mostly used by the middle classes who cannot afford a car, and usually commute with a combination of trotro and taxis. Although not counted in official statistics due to their illegal status, “okada” – commercial motorbike operators – are also a very popular mobility option and a way to overcome traffic congestion. No study so far has tackled the impact of e-hailing platforms such as Uber on modal shift and traffic congestion in the city of Accra.<sup>8</sup>

Designed to regulate the activities of taxis and minibuses, Ghana’s transport regulations require that any person operating a category of commercial vehicles must be authorized by Ghana’s Ministry of Transport (MoT)<sup>9</sup>, and have a commercial vehicle license<sup>10</sup>. Foreign-registered commercial transport companies must additionally obtain a license from the relevant Metropolitan and Municipal District Assemblies<sup>11</sup>. Individual taxi owners are obliged to paint the wings of their cars in yellow, and to carry a neon sign with the word “Taxi” on it, as well as display the taxi’s Transport Association or the taxi Union’s logo<sup>12</sup>. In Accra, taxi drivers must further obtain a taxi license from the relevant District Assemblies related to their area of operations, and pay the embossing to the Accra Municipal Authority (AMA). Taxis are also required to undergo a twice-a-year technical inspection by the Drivers Vehicles Licensing Authority (DVLA) (as opposed to a yearly inspection for private cars) and to pay daily tolls to transport unions for the use of their taxi terminals (see **Figure 1**). Taxi drivers further pay insurance twice a year as opposed to the annual fees characterizing private cars.

5 The name derives from a Ga language word, “three pence”, which was the rate for a ride in public transport vehicles during British colonial rule in Accra. Public transport vehicles came to be called by the same name.

6 Taxi fares are not charged per mile or kilometer. They are still based on distance, but arbitrarily decided between the driver and the customer through haggling.

7 James Dickson Fiagborlo, The Economic Cost Of Traffic In Accra, *Ghanaian Chronicle*, 14/02/2017. The article draws on data from the Department of Urban Roads which we could not retrieve online, . <https://www.modernghana.com/news/755613/the-economic-cost-of-traffic-in-accra.html> Accessed 10/04/2021

8 . For example, a previous study conducted in Bogotá has shown that the emergence of mobility platforms has resulted in a modal shift in daily transportation, rather than congestion (Oviedo et al. 2020).

9 Road Traffic Regulations of 2012 (LI 2180), article 121, point 1

10 Ibid, point 2

11 Regulation 124, point 2

12 Regulation 130, point 5



*Figure 1: The Shiashi-East Legon trotro and taxi station, Accra. The picture shows a trotro and taxi station in Accra, the taxi terminal being indicated by the blue and grey tents. Source: authors' fieldwork.*

In spite of the apparent informality of trotro, the transportation sector in Ghana is highly regulated due to its unionised structure. The Ghana Private Road Transport Union (GPRTU) covers approximately 70% of all trotro, taxi drivers and vehicle owners in the country, with the remaining 30% operating under the Progressive Transport Owners Association (PROTOA) and Ghana Co-operative Transport Association<sup>13</sup>. These unions act as business operating entities that bring together vehicle owners, drivers and owner-drivers. Members of a GPRTU branch typically operate on an established set of routes from a specific terminal<sup>14</sup>. GPRTU is traditionally omnipresent in the regulation of the transport industry in Ghana, and sits every quarter with the government to revise taxis and trotro ticket fares (based on factors such as inflation, increases in the price of spare parts and fuel). GPRTU is so influential in the transport sector that it is practically in charge of identifying new routes areas and stations across the country, and naming new stop locations. GPRTU and PROTOA have been vocally opposed to e-hailing platforms and have denounced the unfair competition they created for taxi drivers on many occasions. However, this has never led to street fights between Uber and taxi drivers as in other cities.

Uber started its operations in Accra in July 2016 after an ad-hoc arrangement with the Ministry of Transport (MoT). This enabled Uber to bypass transportation industry regulations. The arrangement was allegedly made necessary by the fact that Uber's status of "technology firm"

<sup>13</sup> These smaller unions have indeed been created by individuals who branched out of GPRTU. Interview with GPRTU national public relations officer, 07/01/2020

<sup>14</sup> There exists three different types of membership: full membership, shift membership and permission to work within to use the station. Membership fees vary across different branches.

does not fit into the standards of a transport company.<sup>15</sup> Other local and foreign e-hailing platforms soon followed and began operating in the same regulatory vacuum. Uber's Estonian competitor Bolt (formerly Taxify) landed in Accra in 2017, while in 2018 a number of other local and foreign ride-hailing companies had popped up and were trying to gain market share (e.g., Enshika, First Class, Yenke, Uru, Dropyn, Fameko). Some collapsed soon after, others survived but without reaching the market share that would make them a worthy competitor to Uber and Bolt. These two platforms remained the most popular ones among drivers and customers. In June 2019 Russian e-hailing platform Yandex began operations in Accra under the name of Yango, rapidly gaining market share by halving the minimum ride prices in use with Uber and Bolt<sup>16</sup>. At the time of our investigation, Uber, Bolt and Yango were considered “the big Three” e-hailing apps in the country.

Since 2018, a number of drivers have come together into an Online Drivers' Union, which encompassed different groups across the e-hailing industry, some specific to the operator (Bolt drivers' union Accra, Uber drivers' union Accra, Uber Kumasi, etc) some specific to the city of operations. The Union has occasionally organised strikes, asking for a reduction of commissions charged by platforms, more transparency in the app for passengers and less discount promotions for passengers. The Union heavily relies on Whatsapp for its functioning and for sharing information. At the time of our interviews it counted some 2000 driver members across Ghana.

## 2. Material and methods

The research draws on 37 semi-structured interviews conducted in Accra between December 2019 and January 2020 (for a summary of the body of research, see **Figure 2**). Apart from 14 e-hailing drivers, we interviewed 4 e-hailing customers, 2 car owners, one fleet manager, 3 employees of the three main platforms and 5 taxi drivers. We also reached out to a number of regulators, including the deputy director of the Driver Licensing Vehicle Authority (DVLA), two executives at the Ministry of Transport involved in negotiations with Uber, the director of the Transport Division at the Accra Municipal Authority, the national spokesperson of GPRTU, two executives of the Ghana Online Drivers Union, as well as more ‘marginal’ actors such as a private chauffeur and ex-trotro driver, an academic expert on urban transport, and the owner of a new-born e-hailing platform for minibuses.

Some interviewees were “recruited” on a randomized basis. Interviews with drivers were conducted during trips around the city. After obtaining verbal consent, semi-structured interviews lasted approximately 20 to 50 minutes (see **Figure 3** for a map of the trips, and **Figure 4** for the drivers' questionnaire)<sup>17</sup>. Interviews with taxi drivers were led at a taxi station in the East Legon area. The remaining interviewees were selected because of their role in the local mobility landscape (i.e., GPRTU representatives, regulators, platform employees, other transport operators). Finally, we also use ‘snowball sampling’ to complete the recruitment. Our analysis further draws on secondary material: relevant regulations, documents and press releases provided by the interviewees, and online articles from news outlets as well as social media pages (Facebook and Twitter).

15 “Uber signs MoU with Ghana’s Transport Ministry”, BizTech Africa, June 13, 2016

<https://www.biztechafrika.com/article/uber-signs-mou-ghanas-transport-ministry/11432/> Accessed 10/04/2021

16 As of January 2020, Uber and Bolt charged 4 GHC per ride for the shortest distance, while Yango charged 2 GHC.

17 Only once a ride had started, we would ask the driver whether he/she would be interested in taking part to our survey and tell us about their experience with the platform. Most of the interviews took place at peak hours, when Accra’s traffic congestions allowed for long moments of stalling in the car.

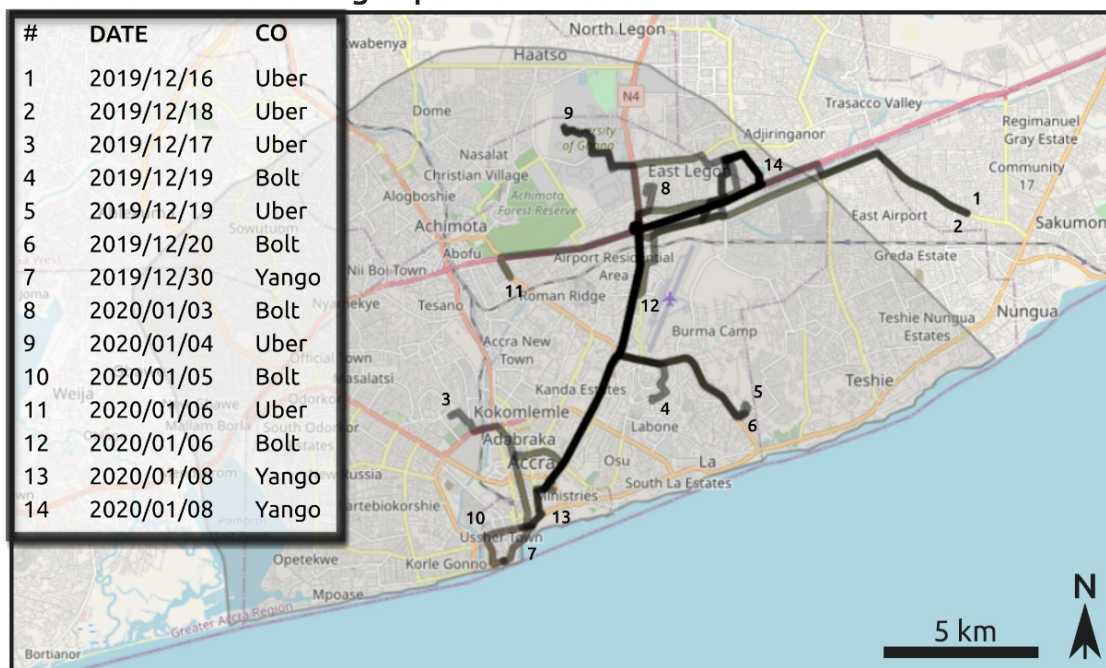




Category of actors		Number of interviewees	Other secondary sources and materials
E-hailing drivers (driving for Uber, Bolt or Yango, either exclusively or in combination)		14	Websites and social media accounts (Facebook and Twitter) of the three platforms
Customers (Uber, Bolt, Yango)		4	Websites and social media accounts (Facebook and Twitter) of the three platforms
Car owners		2	Sample contract between car owner and fleet team
Fleet managers		1	
Platform employees (operations/customer service specialist level for Uber and Bolt, “partner” for Yango)		3	Websites and social media accounts (Facebook and Twitter) of the three platforms, press releases
Taxi drivers		5	Press releases
Taxi drivers’ union (Ghana Private Roads Taxis Union, GPRTU), communications officer		1	GPRTU Constitution, 2015; press releases
Online drivers’ union, executives		2	Press releases, Certificate of Incorporation of Online Drivers Union Ghana
Regulators	Ministry of Transport (MoT), Director from the Research Statistics and Information Management Directorate and one of his subordinates, in charge of the Uber negotiation	2	<ul style="list-style-type: none"> <li>- <i>Road Traffic Regulations, L.I 2180, July 2012</i></li> <li>- <i>Guidelines for charging of fees for the provision of services and facilities and granting of licenses and permits by metropolitan/municipal/ district assemblies, Ministry of Local Government and Rural Development, July 2017</i></li> <li>- Draft of context of regulation of transport services at the metropolitan level, AMA</li> </ul>
	Accra Municipal authority (AMA), metro transport division director	1	
	Driver and Vehicle Licensing Authority (DVLA), deputy director	1	
Other actors	Private driver/ex tro-tro driver	1	
	Transport academic expert	1	
	Owner of e-hailing platform for minibuses	1	

*Figure 2. Summary of the interviews conducted in Accra, in early 2020.*

## Field work - 14 e-hailing trips within Accra



Source: OpenStreetMap, GADM v.3.6, Authors field work

Figure 3. Map of the rides performed with drivers, during which the interviews were conducted.

## 3. RESULTS

### 3.1. Blending into Accra's mobility system

Uber has taken several steps to adapt its business model and successfully blend into Accra's mobility ecosystem. Similar patterns of operations have been adopted by later-entrant e-hailing companies. A first crucial adaptation had to do with the payment system, originally based on debit card payments and automatic deductions of commission fees for drivers<sup>18</sup>. Since in Ghana most people do not hold a bank account<sup>19</sup>, an alternative model was envisaged whereby drivers could be paid in cash or mobile money and would be in charge of paying their weekly commission fee to the company. A second key adaptation concerned the type of cars that were used. In contrast with Uber's sedan cars in use in the global North, Uber Ghana relies upon small economy second-hand cars, because of fuel consumption and cost (See **Figure 5**). This feature was also adopted by later entrants Bolt and Yango. At the time of our interviews, four years later, small economy cars have become synonym for "Uber car"<sup>20</sup>. The phenomenon is so widespread that, according to one of the interviewees, in 2020 anyone driving a small economy car in Accra will be often addressed by default as an "Uber driver"<sup>21</sup>.

18 Interview with former Uber operations manager, 17/12/2019

19 In Ghana, 70% of the population does not have a bank account.

<https://www.ghanaweb.com/GhanaHomePage/business/Unbanked-population-low-savings-culture-high-interest-rates-et-al-563157> Accessed 8 October 2020

20 Interview with driver no. 11, 06/01/2020

21 Interview with driver no.11, 06/01/2020



Figure 5. A typical e-hailing car. Source: authors' fieldwork

Another key local adaptation of Uber's business model had to do with vehicle ownership. As one interviewee remarked *"In Europe people can get loans to buy Mercedes and other nice cars (...) to drive for Uber. This is not possible here. Here you have people who have the money to buy cars but do not have time to drive them with Uber, and people who have the time to drive but do not have a car"*<sup>22</sup>. This observation was fully metabolized by Uber's operations team, which worked to identify and connect car leasing companies and wealthy individuals with potential drivers. In fact, this practice was already common in the transportation industry, where leases and work-and-pay arrangements with car owners were a common entry point for drivers to get a car or trotro<sup>23</sup>. Uber combined this with an intensive recruitment campaign among potential drivers, and incentives in the form of hourly pay for drivers, so they could be available for customers<sup>24</sup>. Finally, a wide marketing campaign on social media such as Facebook was conducted to let potential customers know about Uber.

From a customer perspective, Uber and other platforms were a cheaper option than taxis. E-hailing was also perceived as more transparent - with a fixed formula pricing scheme - compared to traditional taxis, where riders have to bargain the price. Moreover, interviewees mentioned its safety compared to traditional taxi and emphasized the convenience of e-hailing, which allow you to order a ride *"while sitting in your house"*<sup>25</sup>. Three of the four customers interviewed alternated among the three platforms and chose at each time based on lowest price and availability.

### 3.2. Regulatory encounters and the traditional mobility system

When Uber entered the Ghanaian market, it managed to circumvent transportation regulations on the basis of its special mode of operation. The companies that came after it followed in its steps. Our interviews revealed that the attention of regulators remains focused on Uber. It was in consultation with Uber that in early 2020 the MoT was drafting an amendment of the current transportation regulations to include e-activities. Reportedly, only Uber West Africa representatives had been involved in informal negotiations that preceded, and no other e-hailing firms participated. The Transport division of Accra's Metropolitan Authority was also involved

22 Interview with former Uber operations manager, 17/12/2019

23 The latter consists in an agreement between a car owner (affluent individual in the community or company) to lease the vehicle to a driver who uses it as a taxi/minibus and pays the owner weekly until the cost of the car is paid off (normally this takes around two years), after which the driver gets the ownership of the vehicle.

24 Interview with former fleet manager, 29/12/2019

25 Interview with e-hailing customer no.2, 13/01/2020

in these negotiations<sup>26</sup>. Other key transport regulators, including the Transport division of Accra's Metropolitan Authority, were still to issue their own regulatory measures. According to its director, *“Uber is not supposed to operate directly in the market like they are doing now, there is a regulatory gap (...) In Ghana, we are very slow in responding to some of these things but eventually, Uber will have to get a permit from the assemblies in the same way taxis do”*<sup>27</sup>.

In January 2020, Ghana's Drivers Vehicles Licensing Authority (DVLA) issued bylaws to control the activities of e-hailing platforms. These regulations had been agreed upon following consultations with company representatives of “the big Three” (Uber, Bolt and Yango.<sup>28</sup> and introduced an annual fee for Uber, Bolt and Yango drivers. The 60 GHC (9,5 euro) annual fee included a roadworthy check twice a year (as with other commercial vehicles). All costs were to be borne by drivers.<sup>29</sup> The implementation of such bylaws at the time of our interviews had not yet started. The MoT and Accra's Metropolitan Authority were still working on regulation, with only Uber input.

Most of the taxi drivers we interviewed felt that platforms were competing unfairly, as e-hailing drivers pay less fees than they do, and charge significantly less for a trip (about half the price of a taxi). Like e-hailing drivers, taxi drivers usually rent their cars and work similar hours, between 8 to 12 hours a day on average, 5-6 days a week. One interviewed taxi driver was also an Uber driver occasionally<sup>30</sup>, while another had driven for Uber but had returned to taxi driving<sup>31</sup>. A number of taxi drivers told us that they were unwilling to try e-driving because they were not enough tech savvy (i.e., being able to use google maps and operate the app, and/or did not own a smart phone)<sup>32</sup>.

Likely due to the high mobility demand in Accra, the arrival of platforms had not driven taxi drivers out of jobs, nor it had led to street fights between taxi drivers and e-drivers as it did in other countries. Ghana's main transport union, GPRTU, had repeatedly denounced the unfair competition e-hailing drivers bring to taxi drivers, both with the press and with government stakeholders. Our interview with a GPRTU representative exposed a seemingly unbridgeable gap between GPRTU and the Online Drivers Union. When asked about the possibility of joining forces, he stated that this was *“simply impossible”* because *“there are so many things we have been paying to the government ... We pay daily toll to the assemblies. Each taxi driver pays permits to run commercial vehicle to DVLA. Every vehicle pays taxes to the government. We also pay for commercial driving licence. Uber drivers do not pay any of it!”*<sup>33</sup>. Unlike taxis, trotro do not compete directly with e-hailing services as they are cheaper and provide a different service.

### **3.3. A crowded market**

In 2017, Estonian multinational Bolt also began operations in Accra. This move was in line with Bolt's global strategy of entering markets where Uber is already operating, to enjoy late entrant benefits<sup>34</sup>. Bolt aimed to disrupt the market with a lower commission of 15 percent (versus the 25 percent charged by Uber), a series of promotions for customers, and weekly compensation

26 Interview with Ministry of Transport officials, 07/01/2020

27 Ibid

28 Interview with DVLA executive, 09/01/2020

29 Interview with Ghana Online Drivers Union representative, 11/01/2020

30 Interview with taxi driver no. 4, 02/01/2020

31 Interview with taxi driver no. 3, 02/01/2020

32 Interview with taxi driver no. 1, 02/01/2020

33 Interview with GPRTU national public relations officer, 07/01/2020

34 <https://techcrunch.com/2019/03/06/taxify-rebrands-as-bolt-as-it-expands-transport-options-beyond-private-cars/> Accessed 10/04/2021

bonuses for drivers<sup>35</sup>. These incentives prompted many Uber drivers to move to Bolt. Uber responded by introducing remuneration incentives based on the number of rides taken by the driver, rewarding those who completed a certain number of trips per week.

As of 2018, a plethora of other local and foreign ride-hailing companies were trying to gain market share, such as Enshika, First Class, Yenko, Uru, Dropn. Some collapsed soon after, others survived but without the kind of impact that would make them worthy competitors to Uber and Bolt, which remained the most popular among drivers and customers. In June 2019 Russian multinational Yandex arrived in Ghana under the name of Yango. Yango rapidly gained market share by slashing the commission charged to drivers down to 8 percent of the ride price (subsequently raised at 15 percent), and by providing rides for the shortest distance from as little as 2 GHC (0,30 euro)<sup>36</sup>. Unlike Uber and Bolt, Yango has no driving time limit and its recruitment policy is laxer than that of its competitors – allegedly accepting drivers under 25 years old, and unlicensed drivers<sup>37</sup>. Its operations are also characterised by a different payment system for drivers, reportedly built to prevent its predecessors’ “mistake” of making the driver responsible for paying the commission to the platform<sup>38</sup>.

### 3.4. A “three-way ring”

Primacy in the e-hailing services market depends on the number of drivers and customers. Both drivers and customers can choose one service among several alternatives, and they do so mainly based on two factors: price and availability of rides. Drivers will normally use the app which offers the lowest commissions, the highest fare for a ride and the largest number of customers (more income opportunities). Customers will instead choose the app with the lowest fare prices as well as the one that is perceived to offer the largest number of drivers in a given area. Thus, while low prices attract customers, they also discourage drivers. As a platform employee puts it, “*this is a three-way ring: drivers, riders and companies. The truth is, you can’t satisfy both drivers and riders, if ride fares go down, you will get more riders but drivers will be crying. Getting to an equilibrium is hard.*”<sup>39</sup>.

Company’s reputation is an aspect that drivers and customers appear to value, with Uber being perceived as the most established brand<sup>40</sup>. Another key tool is money incentives for both drivers and customers, comparably dispensed by the big Three – bonuses for a certain number of rides completed weekly for drivers and discounts on rides for customers. Yango has even set up a “guaranteed minimum income” after a certain number of trips: if the driver does not reach a weekly amount of 350 GHC (55.5 euro) for 25 rides, Yango will compensate<sup>41</sup>.

According to a fleet manager, it is no coincidence that foreign e-hailing platforms dominate the Ghanaian market: “*Most of them [i.e., new local competitors] think it is about a good service of connecting driver and passenger, what they don’t know is that because there is already competi-*

35 For example, if a driver completed 50 trips he or she would get 500 GHC extra (the equivalent of 80 euros). Bolt would further give money if a driver referred another driver to Bolt (12 GHC per person as of December 2019).

36 As of January 2020, Uber and Bolt charged 4 GHC per ride for the shortest distance, while Yango charged 2 GHC.

37 Interview with driver no. 5, 19/12/2019

38 Yango’s system compelled drivers to have money in their account in order to be able to access orders. This prepaid system was envisaged to force drivers to pay their commission fees timely, an issue with which Uber and Bolt were struggling with. Interview with Yango partner, 08/01/2020

39 Interview with Yango partner, 08/01/2020

40 Interview with driver no. 5, 30/12/2019

41 Although these schemes changed weekly, an average example would be a minimum salary of 350 GHC per week for 25 trips, and 250 GHC for 15 trips. Interview with Yango partner, 08/01/2020

tion, you have to incentivize the driver, you need to make sure that the driver is always going to use your app. That is the trick for most of the entrance, and the local apps are not able to do that; they do not have that kind of money”<sup>42</sup>. As a former platform employee similarly puts it, “these guys are big spenders, they are spending millions, hundreds of thousands of euros on drivers and customers every week to give them incentives, bonuses packages etc. If you come into this space and you are not a big spender, they will drown you. You see a lot of ride-hailing services around, but it is only Uber and Bolt and Yango, because they have the cash.”<sup>43</sup>.

### 3.5. Work conditions

The typical e-hailing driver in Accra is a male between 25 and 45 years old<sup>44</sup>. Except for one, all the drivers interviewed live solely from this work. The fourteen drivers we interviewed work between 10 to 15 hours a day on average, over 5-6 days a week. Weekends (Friday to Sunday, day and night) are the busiest work days and the best for sales, with shifts averaging 15 hours. Most of the drivers we interviewed were alternating between two or three different platforms, or had switched platforms in the past. They did so for many reasons: to get access to more customers in a given area; to be able to work longer since Uber and Bolt limit the total daily working time; to be able to work when one platform blocks them for delay in payment of weekly commissions; or for other reasons such as low ratings from customers.

When asked whether they were satisfied with their work hours and income, drivers’ answers were mixed with the majority saying that conditions were “ok”<sup>45</sup>. While some reported that the job was what they wanted to do for a living, others, especially those who came from white collar jobs, asserted that they hoped to find a better one, but in the meantime, driving was “*better than staying home*” without income<sup>46</sup>. We did not get clear answers to the question of whether their employment conditions were better or worse before taking up e-driving. For some of them, e-driving was a good opportunity compared to previous jobs/unemployment or underemployment. Others felt e-driving conditions were worse than those of their previous employment. Some of these drivers used to be employed in the financial sector and lost their jobs during the 2016 Ghana’s banking sector crisis. Others used to be employed in professions as diverse as car repair, construction, IT, taxi driving and customer service. Among our interviewees, those who came from white collar jobs tended to perceive e-driving as a worsening of working conditions, while this was not the case among those who came from other fields. In terms of income, drivers told us that on an average, for a 12-hour shift, they will make about 250 GHC (39.6 euro) in a day. Out of this amount, they have to pay for fuel, which is the largest expense (100 GHC, 15.8 euro), commission to Uber (62.5 GHC, 9.9 euro), for the majority who does not own a car, sales to car owner (60 GHC, 9.5 euro), phone data to use the app and call customers (10 GHC, 1.6 euro): this leaves the driver with 17.5 GHC per day (2.8 euro) to feed himself and take home.<sup>47</sup> To increase their income, drivers tended to drive up to 15 hours a day and at times even 17 hours per day. Reportedly, in 2019 some 8 drivers had been involved in serious accidents due to sleep deprivation.<sup>48</sup>

The Online Drivers’ Union had been advocating for raising the ride prices, so that drivers would

42 This applies also to the first entrant Uber. Since the concept of e-hailing was new and unknown, drivers were incentivized to be online by Uber in a number of ways, including being paid to be online or free commission for the first year.

43 Interview with former platform employee, 17/12/2019

44 Few women are involved in this type of work as well, for all the three e-hailing apps. Reportedly four of them were part of the Online Drivers Union.

45 Interview with driver no. 1, 16/12/19; driver no. 3, 17/12/19; driver no. 11 06/01/2020; driver no. 13, 08/01/2020

46 Interview with driver no. 9, 04/01/2020

47 Ghana’s minimum wage per day by law is 11.8 GHC, 1.8 euro.

48 Interview with Ghana Online Drivers Union representative, 11/01/2020

not have to work for more than 12 hours a day.<sup>49</sup> The Union also called for a reduction of commissions to Uber, less working hours, more transparency in the app for passengers, and fewer promotions for passengers. Grievances had also been exacerbated due to fuel prices increases and the fact that e-hailing fares had been steadily decreasing as a result of competition between the different platforms. The Online Drivers' Union had been struggling for recognition as a legitimate actor in the game. Uber had ignored all their requests for dialogue and refused to recognize their existence: *"They don't want to hear anything about an Online Drivers Union, our unity becomes a threat to them"*<sup>50</sup>. As one Online Drivers Union's executive deplored, these disagreements had been marked by a change in language over the years: while until 2018, drivers were addressed by Uber Ghana as "driver partners", since 2019 the American tech company had begun to refer to them as "users of the platform".<sup>51</sup> The Union also has mixed relationships with other e-hailing platforms: *"Bolt also rejected us. It is only Yango who received us once. They discussed with us and that week they had almost 500 drivers a day. That's how we went on strike. For one week we all switched to Yango and it affected them (Uber and Bolt)."*

In December 2019, the number of drivers for both Uber and Bolt reached over 10.000 (the exact figures being a corporate secret)<sup>52</sup>, while the Online Drivers Union counted about 25.000 drivers across Ghana (the counting is complicated because as a driver can change platforms, he can be counted more than once)<sup>53</sup>. Our interviewees emphasized how collective action, understood in the traditional sense, becomes much harder because of the ubiquitous nature of platform work, which scatters drivers across the city and across platform companies. Mobile communication apps such as Whatsapp, which allow to constitute large groups of people, were used by drivers to overcome physical distance and to connect. They had also been reported by some of the interviewees as a useful mean for collective action.<sup>54</sup>

### **3.6. Car ownership and the key role of third-party investors**

Most online drivers in Ghana do not own a car. Of the fourteen drivers we interviewed, two did. According to the Online Drivers' Union of Ghana, ninety-eight percent of online drivers in Ghana lease a car from a vehicle owner<sup>55</sup>. In 2021, a Bolt campaign on cars advertised that Bolt drivers could earn up to 1000 GHC per week. However, this amount did not take into consideration the weekly payments to the car owner, which amounted to 500 GHC in the same year, up from the 350-400 GHC (63.5-55.5 euro) reported by the drivers interviewed in 2019. While many cars are just leased, whenever the driver manages to find a "car owner who trusts you",<sup>56</sup> he will get the opportunity to go for a work and pay scheme. In the case of work and pay scheme, the car becomes property of the driver after 2 years of regular weekly payments. Car owners may rely on fleet managers, who are in charge of collecting drivers' payments and deal with any car related issues. This kind of scheme enables a car owner to double an initial investment of about 20.000 GHC (3.174 euro) for the purchase of a second-hand car, into 40.000 GHC (6.348 euro) within two years. While this return on capital appears attractive to many middle-class individuals seeking to capitalize their savings<sup>57</sup>, the cost of repairs required by potential failures along with the fact that drivers might not be able to pay the rent<sup>58</sup> makes

49 Ibid.

50 Interview with Online Drivers' Union executive, 11/01/2020

51 Ibid.

52 Interview with former platform employee, 17/12/2019

53 Interview with Ghana Online Drivers Union representative, 11/01/2020

54 Interview with driver no.14, 8/01/2020

55 Interview with Online Drivers' Union executive, 11/01/2020

56 Interview with driver no.14, 8/01/2020

57 Interview with former car owner, 02/01/2020 ; Interview with former fleet manager, 29/12/2019

58 Interview with former fleet manager, 29/12/2019

this a risky investment. One of the car owners we interviewed had indeed pulled out of such investment due to the hefty repairs her car had incurred.<sup>59</sup>

According to a former fleet manager, buying a car for renting was a good investment when Uber was the only e-hailing platform operating in Ghana. However, since the arrival of competitors the price of rides had dropped drastically, and now drivers were struggling to pay their weekly dues to car owners<sup>60</sup>. One owner-driver explained to us that the expected lifespan of a car is about two years: “*I will drive it for two years, after that I can give it away on work and pay option, or sell it for scraps. I don’t care about it. Because [during the two years of driving it] I will have extracted all the value from the car.*”<sup>61</sup>. In his view, “*owning the car is key to everything. Without car and car owners in Ghana, this e-hailing business does not exist*”<sup>62</sup>. The used state of the car is a risk for both car owners and drivers who opt for work-and-pay schemes. When it comes to working to own a car, the risk is that by the end of the two years, the car will need too many repairs to be profitable<sup>63</sup>. Moreover, from an online driver’s perspective, this investment is based on certain wage expectations that are regularly altered by platform companies’ decisions to reduce ride fares to get the most customers<sup>64</sup>.

Apart from cars and car owners, our survey found that the activity of Ghana’s three main e-hailing platforms depends heavily on international investors. In December 2019, competition among the platforms and the lack of regulation had led to a race to the bottom in ride fares. The competition revolved around keeping rides’ prices low for the longest time to attract customers, while making up for this reduction with bonuses and financial incentives to drivers<sup>65</sup>. The continuous inflow of international investments has been one of the main weapons in this struggle for monopoly in Ghana’s e-hailing market. It should not be forgotten that these platforms are operating at loss worldwide, and would not survive if it was not for investors believing in their future profitability. According to this start-up model, a company may be unprofitable for years, busy achieving monopoly with lower prices, before eventually creating high-margin revenues (Amazon being the most famous example for this)<sup>66</sup>.

While all major strategy decisions are made at the firms’ headquarters (San Francisco for Uber, Riga for Bolt and Moscow for Yango), Ghana’s “big Three” rely importantly on local staff to manage daily operations and marketing, including how to allocate and distribute the money they receive from headquarters, which are in turn supported by international investors<sup>67</sup>. As a former fleet manager wondered: “*The whole thing now is about just trailing money, pumping money into the system hoping that one day all the others will collapse,*” he continued, “*nobody is making money now, only riders are profiting [from the low prices]. The question is, how long are companies like Bolt or Yango going to pump in money like this? Every day*

59 Interview with former car owner, 02/01/2020

60 Interview with former fleet manager, 29/12/2019

61 Interview with driver no.14, 8/01/2020

62 Interview with driver no.14, 8/01/2020

63 Interview with driver no. 7, 20/12/2019

64 Interview with former car owner, 02/01/2020

65 Interview with former platform employee, 17/12/2019

66 For example, in 2019 Uber operated with US\$8.5bn losses, see “Uber to be profitable by end of 2020, CEO Dara Khosrawshahi says”, The Guardian, February 6<sup>th</sup>, 2020, <https://www.theguardian.com/technology/2020/feb/06/uber-profitable-end-of-2020-ceo-dara-khosrawshahi> ; as for Bolt, the most recent available figures in 2018 similarly indicate a net loss of 61 million euros. See “European Uber rival Bolt valued at \$1.9 billion as it plans for post-coronavirus recovery, CNBC, 26<sup>th</sup> May 2020 <https://www.cnn.com/2020/05/26/uber-rival-bolt-valued-at-1point9-billion-plans-for-coronavirus-recovery.html> Accessed 8 October 2020. Yango’s financials are harder to identify, as the platform is part of Russian IT-giant Yandex N.V., which operates several different businesses and as a whole operates at profit (this does not prevent its businesses to support each other financially).

67 Local staff consisted of young graduates, with country managers in their 20s to mid-30s.



*there is some new Russian or Saudi millionaire investor who puts in five million dollars into these platforms, so they can do this, but this is not sustainable.”<sup>68</sup>.*

## **4. DISCUSSION**

### **4.1. Blending and be blended**

The findings illustrate and confirm how these platforms behave as veritable “institutional chameleons”. In the Ghanaian case, their model was in many respects tweaked by adopting patterns already in use in the traditional transportation system. Firstly, Uber’s business model had to be blended with Ghana’s payment system, premised around cash payments and mobile money. Secondly, vehicle standards were also altered to better suit the Ghanaian context – where the cost of fuel and car maintenance is extremely high compared to the average salary. Thirdly, in a city where most of potential drivers cannot afford to buy a car - the essential infrastructure of an otherwise “virtual” relationship between the company and the drivers - Uber adopted the same strategy in use in the local taxi business: external car owners system.

Although some of these features are specific to the Ghanaian context, our research also reveals similarities with Uber’s operations in other cities around the world, such as sidestepping of local transport regulations (Dudley et al. 2017). The company’s involvement in – formal and informal – discussions with Ghana’s Ministry of Transport (MoT) and other government stakeholders to adapt local regulatory frameworks is further consistent with studies of platforms in San Francisco or London (Ferreri and Sanyal 2018; McNeill 2016). These have similarly shown how platform firms have become powerful urban actors trying to influence the regulations that pertains to them. For the Ghanaian case we found that, allegedly due to the size of Uber when compared to its competitors, only Uber representatives were involved in negotiations with the MoT as of December 2019.

### **4.2. Competition under the rules of network effects**

We showed that in Ghana e-hailing platforms rely on networks that connect not only drivers and customers but also, car owners. Market competition between networks is different from market competition between products since the outcome of the former depends on competitors’ capacity to achieve network effect (Katz and Shapiro 1994). It is this network effect that will enable the platform firm to eventually turn profitable after several years of operations. In the case of e-hailing platforms in Accra, we showed that network effects are being achieved through monetary incentives to both drivers and customers: low prices for customers and bonuses for drivers. However, competition among e-hailing platforms complicates the situation. The difficulty of achieving a veritable product differentiation in e-hailing markets, combined with strong network effects, makes these markets winner-takes-all markets (Smichowski 2018). This is also true in Ghana, and as remarked by a number of interviewees, local e-hailing competitors were quickly outweighed because they did not have the capital required to sustain the incentives. It can be further observed that in this competitive environment, the imposition by regulators of a minimum price for rides could be determinant for the survival of platforms (most likely the price charged by the platform with the strongest network of drivers and riders at the time of price cap implementation).

### **4.3. Impact on work and agency of e-hailing drivers**

The online driving business has created dozens of thousands of jobs, and constitutes a source of revenue for many previously unemployed and underemployed Ghanaians. “Uber driver” is now

<sup>68</sup> Interview with former fleet manager, 29/12/2019

a popular job, perceived as decent and preferable to many others, providing drivers for a daily wage which is slightly above minimum wage for drivers who do not own a car. While the arrival of e-hailing platforms has had a positive effect on employment, it is not clear whether or not e-hailing offers better conditions to drivers. When comparing online drivers with taxi drivers, the latter appear to be more protected when it comes to maintaining ride fares to a certain minimum. However, it is remarkable that none of the online drivers we interviewed declared wanting to become a taxi driver, but that some returned to being taxi drivers after driving for Uber. Several drivers spoke of precarity, but mainly those who had experienced formal employment before Uber, which was a minority in our sample. Further studies on the lifelong career paths of e-hailing drivers are needed to assess the qualitative changes in their working conditions in the Ghanaian labour market.

Our investigation also highlighted how platforms try to avoid the unionisation of workers: they do their best to maintain a direct link with each driver, who should ideally be isolated from others. When isolated, the only way to “act” and obtain better work conditions is to pick the platform that offers the best terms. However, our fieldwork also highlighted that some drivers have managed to overcome such isolation through the creation of the Online Drivers’ Union. The nature of the work relationship with online drivers has also repercussions on drivers’ bargaining power. It could be argued that at first glance, the resistance practices of online drivers are in many ways different from large-scale walkouts in Fordist-type factories, but not too different from the way a job can be individually negotiated in the informal economy. The common denominator is often to simply “walk away” from an unsatisfactory agreement with an employer. A key aspect highlighted by our research is that car ownership, when combined with unionisation, greatly increases drivers’ agency and bargaining power vis à vis the platform.

#### **4.4. Patient, and not only international, capital**

The fieldwork also made clear that platforms are not born equal. In Ghana, only multinational platform firms backed by international capital can afford to play the long-term game of incentives and low prices to try to capture the local market. This very peculiar race is based on slowness. Resilience in this context equals to financial muscles and constant commitment to pump money into the system in the hope that along the way, competitors will drain their finances first. The existence of multiple e-hailing platforms with “limitless” financial capabilities is also the reason for why the pumping-in of international capital has not produced a winner so far. We could speak in this case of “patient capital”: not in the traditional sense of an incorporation of labour into the social contract, but rather, as a part of a winner-take-all market strategy aimed at achieving monopoly of the market (Rahman and Thelen 2019: 181).

Scholars have highlighted the centrality of transnational “virtual capital” behind e-hailing platforms and its seemingly “placeless” characteristics thanks to the intermediation of algorithmic management (Carmody 2015). Our research shows instead that technological intermediation and international investments are only part of the story, and not as omnipotent as sometimes depicted in the literature on platforms.

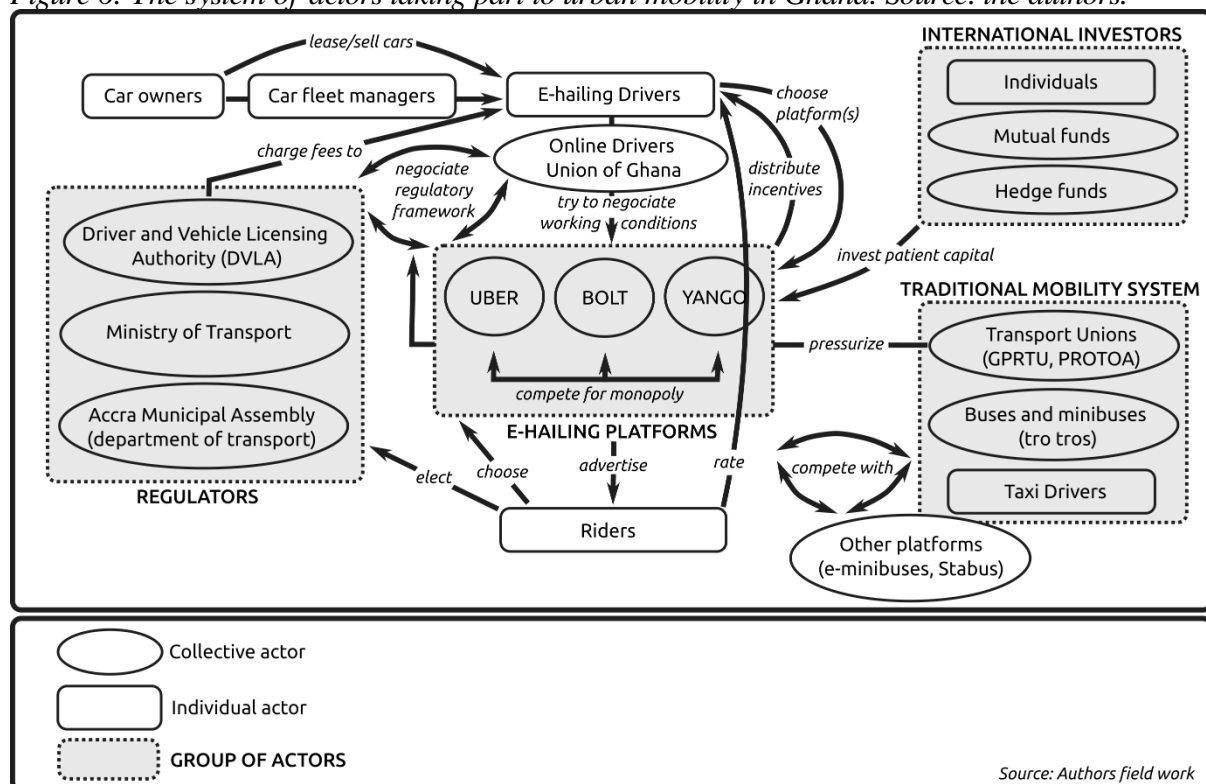
As we have shown in the case of e-hailing platforms in Accra, investments by car owners and drivers are vital for platforms to exist and operate in the Accra context. Our findings suggest that e-hailing platform firms heavily depend on local investments (by both car owners and drivers) as well as physical infrastructure (i.e., cars). This result confirms what has been remarked in other African countries, where differently from cities of the global North, cars for online driving are an investment rather than “idle assets to be put to work part-time to make supplemental income” (Zollmann and Ng’weno 2018).

To sum up, the existence of e-hailing platforms in Accra is premised on acts of investments, at many levels: by online drivers, by car owners and, though remotely, by international investors in companies such as Uber. We should see these are part of a broader, local system of actors, where power equilibrium is constantly shifting, as we shall discuss more in detail below.

#### 4.5. A system of actors

In order to get a clearer picture of how platforms take place in a local system of actors, four main groups of actors can be identified in the case of mobility in Accra: regulators, platforms, traditional mobility actors and international investors (see **Figure 6**). Here we use the word “group” for their similarity. However, actors that belong to the same group can be very competitive with each other, as are for example different platforms. What should be emphasised is that each actor depends on the others, in relationships whose balance can evolve according to changes in other parts of the system of actors. An example for this is the competition between platforms, from which drivers benefitted when negotiating better work conditions with Uber. Another is the regulators’ prospective decision to set a fixed price for rides, which would impact the competition between platforms: potential gains for platforms would in turn depend on the volume of subscriptions a certain platform gets from drivers and customers when the fixed price is introduced.

Figure 6. The system of actors taking part to urban mobility in Ghana. Source: the authors.



There are many asymmetries between actors when it comes to power and information diffusion. These asymmetries have to do with the actor’s position in the system. However, our interviews interestingly showed that in some cases the actors are not unaware, passive pawns in these dynamics. As a matter of fact, some seemed to have a lucid grasp of the system and broader dynamics they took part in. Examples taken from our interviews include how a local fleet manager evoked international investors, or how drivers discussed the car ownership issue. This

observation is consistent with other studies showing how platforms such as Uber “are not almighty” (Pollio 2021: 54). Our work emphasised platforms’ vital reliance on local investments by both drivers and car owners, but also on the actions of regulators and traditional transport actors. These findings prompt us to adopt a more nuanced view of digital platforms, than the oft-quoted notion that they would be “too big to control, too new to regulate, and too innovative to stifle” (Graham 2020: 453).

## **CONCLUSION**

Our account of how e-hailing platforms arrived in Accra has highlighted the different adaptations Uber and its competitors had to make in order to blend into the Ghanaian context. We emphasized how competition among platforms seemingly contributed to lower ride prices for customers, and to increase the bargaining power of e-hailing drivers. We described how these drivers, although facing many constraints, have leveraged on certain strains to make claims for better work conditions. We have found that survival of e-hailing platforms in Ghana is not only premised on international investments but also, most fundamentally local investments by car owners and drivers. Using examples from our fieldwork and interviews, we have shown how the agency of e-hailing drivers depends on the broader system of actors. More generally, we have shown how the relationships between these actors – platforms, drivers, passengers, regulators, car owners, international investors, etc. - may substantially reshape the functioning and way of operating of platforms, as well as their impact on online drivers’ work conditions. Further comparative studies across different cities and countries would be needed to assess common denominators and differences with the Ghanaian experience.

## **Acknowledgments**

TL thanks G.Ramelet for her useful feedback on an early version of the manuscript.

## **Competing interests’ statement**

The authors declare they have no competing interests.

## **Funding**

This research was funded by the École des Hautes Études en Sciences Sociales (EHESS), Paris, for the postdoctoral research project “virtual capital and ride-sharing: towards globally converging trends? The case of Uber taxi drivers in Paris and Accra”.

## **Author contributions**

PP, HC and TL designed the study. PP did the fieldwork, conducted the interviews and drafted the paper. HC prepared the figures. PP and TL wrote the manuscript. HC and TL wrote the research proposal and obtained the funding. All authors commented and approved the final version of the manuscript.

## **Bibliography**

Acheampong, R. (2021) Societal impacts of smart, digital platform mobility services—an empirical study and policy implications of passenger safety and security in ride-hailing, *Case studies on Transport Policy*, Volume 9, Issue 1, pp. 302-314

- Adebayo, J. O. (2019) South Africa: ‘Who Stole my Passengers? Uber Cabs, Metered Taxis and the Search for Common Ground, *Conflict Studies Quarterly*, no. 27, pp. 3-20
- Agyemang, E. (2020) “Uber is here to stay”: exploring the policy implications of the Uber-Local taxis turf war in Accra, Ghana, *Case studies on Transport Policy*, Vol. 8, no. 1, pp. 59-66
- Anwar, M.A., Graham, M. (2020) Hidden transcripts of the gig economy: labour agency and the new art of resistance among African gig workers. *Environmental Planning A*, vol. 52, no. 7, pp. 1269–1291
- Barns, S., (2020) *Platform Urbanism: Negotiating Platform Ecosystems in Connected Cities*. Palgrave MacMillan, London.
- Budu, J. (2020) Disruptive Technology Adoption in Developing Countries: The Case of Uber in Ghana, in Boateng, R. (ed) *Handbook of Research on Managing Information Systems in Developing Economies*, IGI global, Hershey, pp.51-69
- Carmody, P. and Fortuin, A. (2019) “Ride-sharing”, virtual capital and impacts on labor in Cape Town, South Africa, *African Geographical Review*, Vol. 38 no. 3, pp. 196-208
- Dudley, G., Banister, D. and Schwanen, T. (2017) The Rise of Uber and Regulating the Disruptive Innovator. *The Political Quarterly*, Vol. 88, pp. 1-8
- Essel D., Spadaro J.V. (2020) *Health and economic impacts of transport interventions in Accra, Ghana*. Geneva: World Health Organization; available at <https://www.who.int/publications/i/item/9789240017306>
- Esson, J. et al. (2016) Livelihoods in motion: Linking transport, mobility and income-generating activities, *Journal of Transport Geography*, Volume 55, pp. 182-188
- Fenton, A., Wafer, A. and Fitchett, J. M. (2020) Youth Mobility in a Post-Apartheid City: An Analysis of the Use of E-Hailing by Students in Johannesburg, South Africa, *Urban Forum*, Vol. 31, pp. 255–272
- Ferreri, Mara and Sanyal, Romola (2018) Platform economies and urban planning: Airbnb and regulated deregulation in London. *Urban Studies*, Vol. 55, no. 15 pp. 3353-3368
- Fielbaum, A., and Tirachini, A. (2021) The sharing economy and the job market: the case of ride-hailing drivers in Chile. *Transportation*, Vol. 48, no. 5, pp. 2235-2261
- Giddy, J. (2020) "Travel Patterns of Uber Users in South Africa" in Rogerson, J. M. and Visser, G. (eds) *New Directions in South African Tourism Geographies*, pp 113-127
- Giddy, J. K. (2019) The influence of e-hailing apps on urban mobilities in South Africa, *African Geographical Review*, Vol. 38, no. 3, pp. 227-239
- Goletz, M., and Bahamonde-Birke, F. J. (2021). The ride-sourcing industry: status-quo and outlook. *Transportation Planning and Technology*, Vol. 44 no. 6, pp. 561-576
- Graham M., Hjorth I. and Lehdonvirta, V. (2017) Digital labour and development: Impacts of global digital labour platforms and the gig economy on worker livelihoods. *Transfer*, Vol. 23 no.2, pp. 135–162

- Graham, M. (2020) Regulate, replicate, and resist – The conjunctural geographies of platform urbanism. *Urban Geography*, Vol. 41 no.3, pp. 453-457
- Graham, M., & Anwar, M. (2018). Two models for a fairer sharing economy. In N. Davidson, M. Finck, & J. Infranca (Eds.), *The Cambridge handbook of the law of the sharing economy*, Cambridge: Cambridge University Press, pp 328–340
- Henama, U., & Sifolo, P. (2017). Uber: The South African experience. *African Journal of Hospitality, Tourism and Leisure*, 6(2), 1–10
- Katz M.L., Shapiro C. (1994) Systems competition and network effects, *Journal of Economic Perspectives*, vol.8, no. 2, pp 93--115
- Kumar, N., Nassim, J. N. and Mehrab, B. M. (2018) Uber in Bangladesh: The tangled web of mobility and justice, in *Proceedings of the ACM on Human-Computer Interaction*, Vol.2, CSCW, Article 98, New York, NY
- Lakemann, T. and Jann, L. (2019) Digital Platforms in Africa: the “Uberisation” of Informal Work, *GIGA Focus Africa*, No. 7, pp.1-10
- Lee, M. K., Kusbit, D., Metsky, E. and Dabbish, L. (2015) Working with Machines: The Impact of Algorithmic and Data-Driven Management on Human Workers. *Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems*, ACM, NY, 1603–1612
- Marcano, I. J. (2018) E-hailing and Employment Rights: The Case for an Employment Relationship Between Uber and its Drivers in South Africa, *Cornell International Law Journal*, Vol. 5, no. 1, art. 8, pp. 273-296
- Mc Neill, D. (2016) Governing a city of unicorns: technology capital and the urban politics of San Francisco, *Urban Geography*, Vol. 37, No. 4, pp. 494-513
- Obeng-Odoom, F. (2011) The informal sector in Ghana under siege, *Journal of Developing Societies*, Vol. 27, No. 34, -pp. 355-392
- Ocran, M. K. (2018) Estimating the Size and Trends of the Informal Economy in Ghana, *AERC Research Paper No. 355*, African Economic Research Consortium, Nairobi
- Oviedo, D., Granada, I. and Perez-Jaramillo, D. (2020) Ride sourcing and Travel Demand: Potential Effects of Transportation Network Companies in Bogotá, *Sustainability*, Vol. 12 no.5, pp.1-16
- Pollio, A. (2019) Forefronts of the Sharing Economy: Uber in Cape Town. *International Journal of Urban and Regional research*, Vol.43, no.4, pp. 760-775
- Pollio, A. (2021) Uber, airports, and labour at the infrastructural interfaces of platform urbanism, *Geoforum*, vol. 118, pp. 47–55
- Puche, M. L. (2019). Regulation of TNCs in Latin America: The case of uber regulation in Mexico City and Bogota. In Finger, M. and Audouin, M. (eds) *The governance of smart transportation systems*, Springer, Cham, pp. 37-53

- Rahman K.S., Thelen K. (2019) The rise of the platform business model and the transformation of twenty-first-century capitalism, *Politics & Society*, vol.47, no. 2, pp.177-204
- Rosenblat, A. (2018) *Uberland: how algorithms are rewriting the rules of work*. University of California Press, Oakland
- Rosenblat, A. and Stark, L. (2016). Algorithmic labor and information asymmetries: A case study of Uber's Drivers. *International Journal of Communication*, Vol. 10, pp. 3758–3784
- Sadowski, J. (2020) Who owns the future city? Phases of technological urbanism and shifts in sovereignty, *Urban Studies*, online first
- Scholtz, T. (2016) *Uberworked and Underpaid. How Workers Are Disrupting the Digital Economy*, London, Polity Press.
- Simmons, R. O. B. (2018) Disruptive Digital Technology Services: The Case of Uber Car Ridesharing in Ghana, *AMCIS 2018 Proceedings*
- Simmons, R. O. B., Effah, J., Boateng, R. (2019) Digital Innovation and Taxi Services: The Case of Uru in Ghana, *AMCIS 2019 Proceedings*
- Smichowski, B. C. (2018) Is ride-hailing doomed to monopoly? Theory and evidence from the main U.S. markets, *Revue d'économie industrielle*, Vol. 162, no. 2, 2018, pp. 43-72
- Söderqvist, F. (2017) A Nordic approach to regulating intermediary online labour platforms, *Transfer: European Review of Labour and Research*, Vol. 23, no. 3, pp. 349-352
- Tassinari A. and Maccarrone V. (2020) Riders on the storm: Workplace solidarity among gig economy couriers in Italy and the UK. *Work, Employment and Society*, vol. 34, no. 1, pp. 35-54
- Thelen K. (2018) Regulating Uber: the politics of the platform economy in Europe and the United States, *Perspectives on Politics*, Vol.16, no. 4, pp.938-953
- Tirachini, A., and del Río, M. (2019). Ride-hailing in Santiago de Chile: Users' characterisation and effects on travel behaviour. *Transport Policy*, vol. 82, pp. 46-57
- Vallas S., Schor J.B. (2020) What do platforms do? Understanding the gig economy, *Annual Review of Sociology*, Vol.46, no. 1, pp.1-22
- Zanoni P. (2019) Labor market inclusion through predatory capitalism? The “sharing economy”, diversity, and the crisis of social reproduction in the Belgian coordinated market economy. In ed. Vallas, S. P., and Kovalainen, A. (2019) (ed) *Research in the Sociology of Work*, Vol. 33, Work and Labor in the Digital Age. Binkley, UK: Emerald (MCB UP)
- Zollman, J., & Ng'weno, A. (2018). Uber and Taxify in Africa: Good work or a race to the bottom? Center for Global Development  
<https://www.cgdev.org/blog/uber-and-taxify-africa-good-work-or-race-bottom>