

ANALYSIS OF OPERATIONS AND USER'S DISPOSITION TO E-HAILING SERVICES IN ABEOKUTA, OGUN STATE

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Abstract

E-hailing services have gained popularity in recent years all over the world, and the idea is highly reliant on the widespread usage of mobile devices, which link e-hailing business owners with customers using mobile phone software. Additionally, in a city area, little packages containing crucial documents, receipts, and presents are frequently distributed in a condensed period of time. This study sought to evaluate the operational traits and user impression of the dispatch riders e-hailing transportation system in the Abeokuta Metropolis, Ogun State, Nigeria. The study addressed the dispatch riders and end users. Purposive sampling and convenience method was used for this study, which focused on the dispatch riders and end users respectively. Also, one hundred and fifty questionnaires were administered (50 to dispatch riders and 100 to end users). The study showed that the e-hailing industry (dispatch riders) has a male predominance and that its operators are young adults with relatively high levels of education. This showed that the industry provides educated people who are unable to find formal sector employment with an alternative source of income. In addition, the study shows that young persons are addicted to internet shopping, while older people use it less frequently than younger adults. The study also showed that the factors most impacting online purchase and delivery are affordability, delivery time, and availability. Conclusively, In order to ensure that any regulations for the industry, including taxation policies, are evidence-based, in line with the realities faced on the ground, and introduced in a way that facilitates the sustainability of platforms as well as driver livelihoods, the study recommended that labor authorities and transportation regulators work with e-hailing platforms and development practitioners.

Keyword: E-hailing, Smart Phone/ Mobile App, Dispatch Rider, Operations, Users

1.0 Introduction

One of the major urban systems that has been transformed by the introduction of new information and communications technology (ICT) is transportation and rapid urbanization has resulted in significant changes in society, the economy, and technology (Li, Zhang, and Sun, 2011). Also, a never-before-seen wave of developments in mobility services is being driven by technologies. Numerous new e-hailing services for personal mobility has emerged as a result of ubiquitous real-time communications and peer-to-peer interaction made possible by mobile computing, which has facilitated transport supply and demand at low transaction costs (e.g. Motorcycle Dispatch Riders, Uber, Bolt, Gokada, Opay, DHL etc). E-hailing is a term to describe booking rides and paying for car service through a Smartphone app with a transportation network company. In recent years, e-hailing services have become popular

around the world. This model relies on the widespread use of mobile devices that is smartphone, which connect potential consumers with business owners through mobile phone software. The emergence of e-hailing has changed people's single way of purchasing products; travel; booking a car in advance and choosing a destination through mobile phone software and invariably saved time and facilitated people's journey. This approach matches the mobility demand and the idle supply and reduces the travel time, so e-hailing is considered a promising mode of transportation (Miao, Han & Lin, 2016). The transport system is considered to lower the entry barriers to the service for both users or passengers and drivers. The rating system facilitates trust between drivers and users, and the flexible working hours make ride-hailing services a popular choice for people and starting a new career or a side-job (Stone, 2015).

In addition, a key feature of these services is that an algorithm replaces human dispatchers in the task of matching available drivers to the incoming requests (Cheng & Nguyen, 2011). Kedmey (2014) stated that companies are now able to optimize the matching with unprecedented precision using data they possess on cars, drivers, and traffic conditions, resulting in better service availability, shorter waiting times, and ultimately a boost in efficiency or company profits. On the other hand, in the process of maximizing effectiveness or minimizing waiting times, drivers' and commuters interests get sidelined; also, undesirable social outcomes might emerge (Grisworld, 2014).

However, the Covid-19 pandemic has shown that average distance travel trips for shopping has been getting shorter as the day goes by, a pattern which has been attributed to online shopping. Although this new e-commerce trend could supplant some personal shopping trips, it still causes some problems. However, the boom of end-to-end delivery as it relate to food and mail distribution is not considered in urban or traffic plans, which caused unexpected planning and traffic problems. Such traffic demand was not involved in the initial urban roadway network planning, and there is no specific plan dealing with such a large amount of special travel patterns requiring a short dwell time. Indirect traffic increases caused by online-shopping, including failed deliveries, return and exchange activities, and sometimes dispatching shopping are problem to be addressed in this study putting into consideration the operation of the dispatch riders as well. It is against this background that this study seeks to address the operational characteristics and user's perception of e-hailing transport system in the distribution of foods and mail in Abeokuta Metropolis, Ogun State Nigeria. To achieve the aim of the study, the following objectives were considered; to evaluate the operational characteristics of e-hailing transport service; examine the challenges of e-hailing transport service and assess the user's perception on app based operation for e-hailing in the study area.

2.0 Literature Review and Conceptual Underpinning (E-Hailing in Context)

E-hailing services have revolutionized the transportation industry by providing an efficient and convenient way for customers to request rides. This digital transformation has been facilitated by the widespread use of smartphones and the development of mobile applications that allow users to easily connect with nearby drivers. With location-based services, these apps can pinpoint a user's location and connect them with the nearest available driver, reducing waiting times and improving the overall user experience (Anderson, 2014).

Global positioning system (GPS) is the most common technique used to retrieve location information for e-hailing services, allowing drivers to navigate to the customer's location and providing users with real-time information on the location and estimated time of arrival of their driver (Solanki and Hu, 2005; Ruangkanjanases and Techapoolphol, 2018). Additionally, location-based services can provide value-added services such as identifying nearby restaurants, events, and other points of interest, making e-hailing services even more useful to customers (Reichenbacher, 2004). As e-hailing services continue to grow and evolve, location-based services and other technological advancements will likely play an increasingly important role in improving the user experience and expanding the capabilities of these services.

With the integration of location-based system into an e-hailing mobile apps, information such as locating the availability of e-hailing drivers, waiting time for e-hailing driver to pick-up, and estimated travelling time from one place to another are made available to the e-hailing apps users. Today, transportation services such as car-sharing, ride-sharing, and on-demand ride sourcing are thriving worldwide (Henao and Marshall, 2017). This is due to low cost of transportation, lower fuel consumptions, reduce carbon emissions, and are beneficial for mitigating traffic congestions (Ferguson, 1997; Kelley, 2007; Morency, 2007; Caulfield, 2009; Chan and Shaheen, 2012). Consumers are concern about reliability, privacy threats and concerns for personal safety (Axsen and Sovacool, 2019). The growing number of vehicles on the road contributing to the traffic congestions and the increasing number of unwanted emissions of the vehicles has seen some individuals switching to ride-sharing (Dhawan and Yadav, 2018). According to Alemi, Circella, Handy & Mokhtariand (2018), individuals with strong pro-environmental are motivated to adopt e-hailing as an alternative mode of transportation. Further, Nie (2017) affirmed that common issues regarding the public transportation can be linked back to the unreliable time of arrival. This problem has affected public users as they are unable to plan their journey properly. So, e-hailing services have continued to gain popularity among drivers and commuters in Malaysia. There are more e-hailing service providers available in Malaysia with mobile app new added-features and competitive price to provide competition and more option to the e-hailing users. The emergence of many e-hailing service providers aiming to provide better proposition has seen traditional taxi drifted away from the competition.

Furthermore, many individuals in Nigeria rely on public or alternative forms of transport. The country's vehicle-to-population ratio equates to 60 vehicles per 1,000 people, which is relatively low compared to countries such as Brazil and China, which achieved scores of 249 and 154, respectively (Nairametrics, 2017). Moreover, only 41% of the 11.8 million vehicles in circulation in the country are privately owned and vehicle ownership is largely concentrated in urban areas and main cities such as Lagos, which is ranked highest in terms of the number of licensed drivers (National Bureau of Statistics, 2018). Taxi and e-hailing services play an increasingly important role in the transportation of individuals in Nigeria's urban centres. The industry comprises traditional taxi services where fleets are owned by a single operator, as well as e-hailing platforms that match independent drivers to riders. Presently, the taxi and e-hailing services are playing an important role in the movement of people, good and services in Nigeria.

In addition, within few years, Nigeria has become one of the largest e-hailing markets in Africa. E-hailing platforms first entered the Nigerian market in 2014, with Uber starting its operations in Lagos (Meagher, 2018). Bolt (formerly known as Taxify) then came to Lagos in 2016. Uber extended its operations to the national capital, Abuja in the same year. Since then, the operations of e-hailing platforms have expanded across major cities in Nigeria, taking advantage of the country's relatively underdeveloped public transport system, high population and rapid urbanization. The market now comprises a few big international players, as well as a number of smaller homegrown platforms. insight2impact's systematic review of platform ecosystems in Africa revealed that Nigeria had 21 e-hailing platforms operating by 2019 with only Kenya having more operators in a single market. Of the 21 platforms in operation in Nigeria, three are bike-hailing start-ups, GoKada and ORide (Johnson *et al*, 2020).

Moreover, e-hailing comes in different forms in Nigeria, and two- or three-wheel motorcycles (okada) are popular alternatives to the more conventional taxi service offered by Uber or Bolt. Based on a similar model as Yego Moto or SafeBoda in East Africa, these motorcycles offer users a more efficient way of navigating traffic in Lagos. In a short period, they have gained popularity and have grown substantially owing to the interest investors. The three largest operators; GoKada, ORide and MAX raised around USD185 million in venture capitalist funding in 2019. This investment has supported employment on these platforms, with around 14,000 jobs reportedly having been created thus far (Akinpelu, 2020). Nigeria's e-hailing market is dominated by three major digital platforms, which service the bulk of users in the country. These are Uber, GIGM and Bolt. The continued growth and sustainability of the industry is complicated by a challenging regulatory environment. A communication issued by the Lagos State Government in February 2020 inferred a blanket ban on the continued commercial use of e-hailing motorcycle operators and requirements for commercial ride-hailing drivers to secure permits to continue operating (Akinpelu, 2020). Disparities in regulation between traditional taxi cabs and e-hailing operators have raised tensions (Nwanko, 2020), and the government's proposed licensing requirements as well as the proposed 10% tax on e-hailing trip transactions are likely to apply significant pressure to both the sustainability of e-hailing business models and driver livelihoods (Banya, Johnson & Carboni, 2020). However, the lack of regulatory clarity impedes not only the operational continuity of drivers and platforms, but also the investment outlook for the industry (Akinpelu, 2020).

3.0 Materials and Methods

3.1 Study Area- Abeokuta, Ogun State

Ogun State is a state in south-western Nigeria (Figure 1), created in 1976 and it borders Lagos State to the South, Oyo and Osun State to the North, Ondo to the East and the Republic of Benin to the West. Abeokuta is the capital and largest city in the state. The state nickname is 'Gateway to Nigeria'. The 2006 census recorded a total population of 3,751,140 residents. Ogun State (map 3.2) consists of 20 local government areas. The State was carved out of the old western state in Nigeria and name after the Ogun River which runs across it from North to South. Its people are predominantly the Egbas, Ijebus, Yewas, Remos and Aworis who belong to the main Yoruba ethnic group. Also, it has sub group which are Ketu, Ikale, Ilaje, Ogori, Anago and Egun. There are also significant numbers of Nigerians from other part of the country as well as foreign nations. The state is a major economic hub. It has one of the largest

concentrations of industry in the country and serves as major corridor for transportation of goods, services and people between nation commercial centre Lagos, and the rest of the country as well as the large West Africa market. The state is the largest producer of cement in the country.

In addition, the study area which is Abeokuta (Figure 2 and Figure 3) is the largest city and state capital of Ogun State in Southwest Nigeria. It is situated on the east bank of Ogun River, near a group of rocky outcrops in a wooded savanna 77 kilometers north of Lagos by railway, or 130 kilometers by water. As of 2006, Abeokuta and the surrounding area had a population of 593,140. Abeokuta lies on latitude 7°15'N and Longitude 3°25'E, the city is about 81km southwest Ibadan capital of Oyo State and 106km North of Lagos. Abeokuta is located at an altitude of about 157m above the sea level amidst isolated out-crops of natural formation of granitic rock which give the city landscape its undulating characteristics. The city has an area of 62,798.63 hectare of land area and is predominantly inhabited by the Yoruba (Egba). There are two physical features which have exerted direct influence on the physical growth and development of the city. The first is the presence of Olumo Rock (172.8m) at the central part of the city, the other part is the Ogun River located at the Southwestern part of the town passing through the foot of Ashmun Hill.

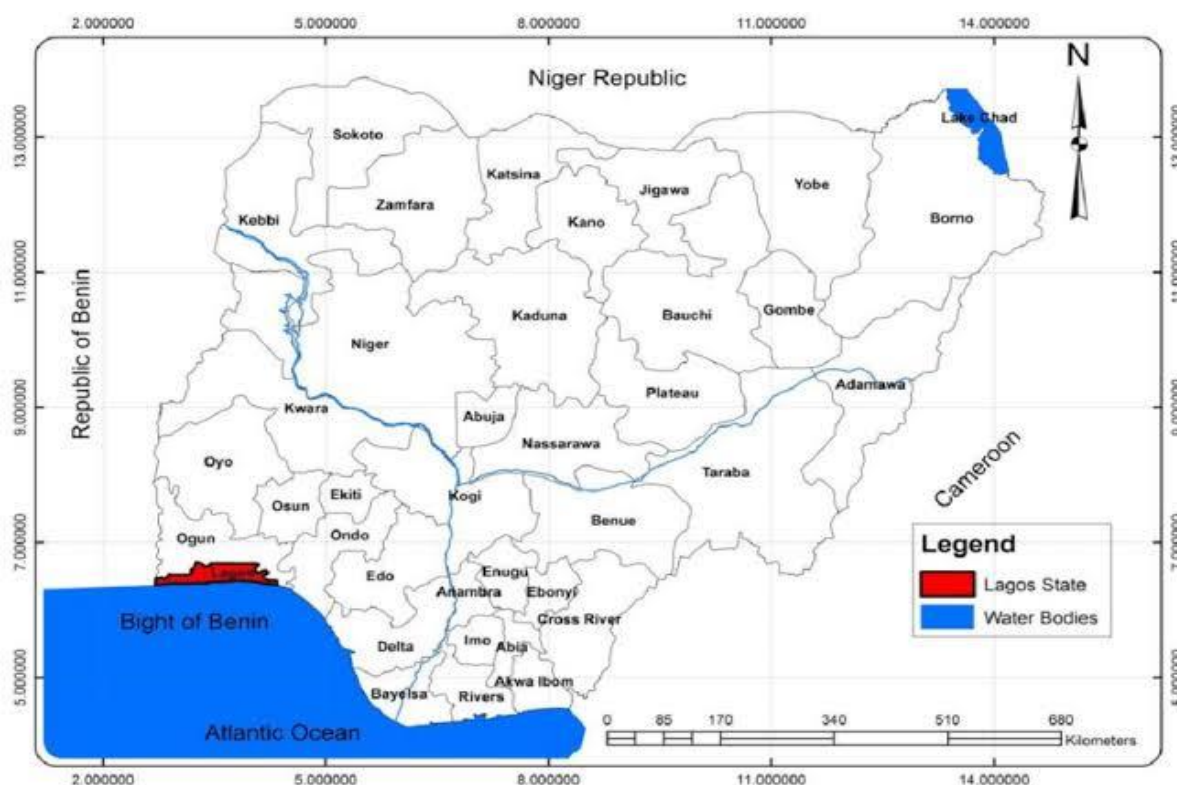


Figure 1: Map of Nigeria Showing Ogun State
Source: Author's Field, 2022

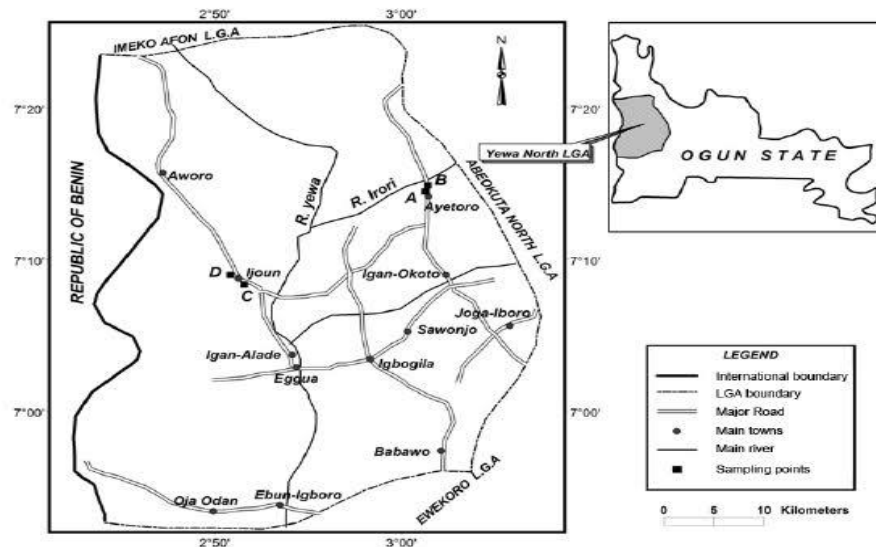


Figure 2: Map of Ogun State Showing Abeokuta L.G.A.

Source: Author's Field, 2022.

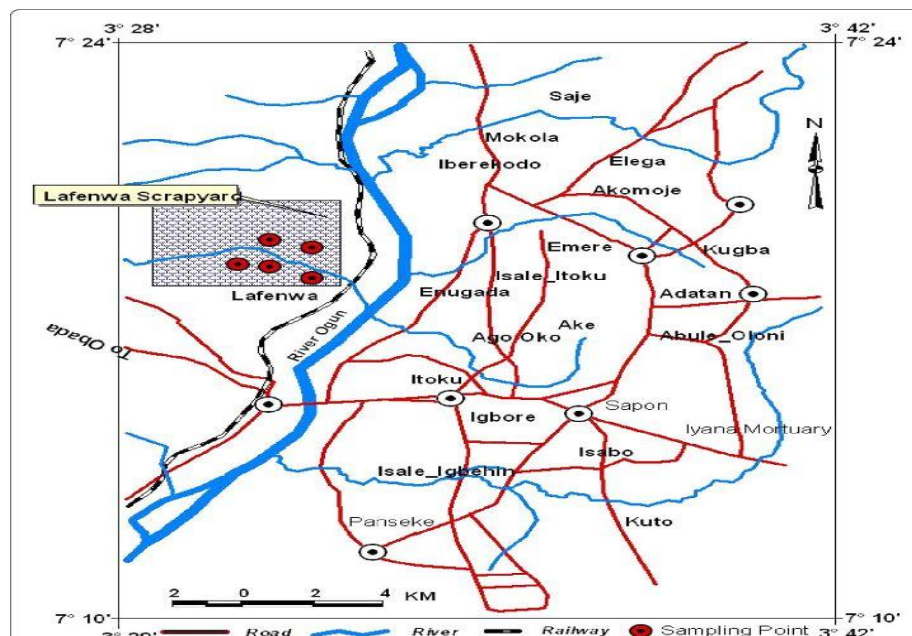


Figure 3: Map of Abeokuta Showing the Road Network

Source: Author's Field, 2022

3.2 Methodology

The study utilized a combination of primary and secondary data collection methods. Primary data was collected through field surveys and interviews with 50 dispatch riders and 100 end users in Abeokuta, Nigeria. Purposive sampling was used to select the dispatch riders based on their fit with the study's profile, while convenience sampling was used to select end users based on their availability and willingness to participate.

Data was collected using questionnaires for both dispatch riders and end users. The questionnaire was designed to collect information on various aspects of e-hailing services, including user experience, service quality, pricing, and satisfaction. The collected data was organized and coded for analysis. Descriptive statistics and inferential statistics were used to analyze the data collected. Descriptive statistics provided a summary of the data, while

inferential statistics helped to draw conclusions and make predictions based on the data. The results of the study were used to provide insights into the factors that influence the adoption and usage of e-hailing services, and to identify areas where improvements can be made to enhance the user experience.

4.0 Results and Discussion

4.1 Demography of Respondents

Table 1 below revealed the e-hailing industry as a male dominated industry and the age distribution between 25-35 years old accounted for 76% while 24% were within the age of 36 and more than 40 years. This implies that proportion of young adults in the industry is larger than the older ones in the industry. Also, the Yoruba tribe accounted for 58%, Igbo is 36%, Hausa are 4% and 2% belongs to other tribe in Nigeria. This implies that the Yoruba and Igbo dominate the industry in the study area. Moreover, the operators involved in e-hailing hold relatively high levels of educational qualification: 68% of the dispatch riders hold a tertiary qualification as their highest level of education, while 20% have completed secondary school and only 12% are educated up to a primary school level. This would suggest that the industry offers an alternative livelihood opportunity to educated individuals who are unable to secure formal sector employment.

Table 1: Demography of Respondents

Demography of Respondents	Description	Frequency	Percentage
Gender	Male	50	100
	Female	0	0
	Total	50	100
Age	Below 25 years old	5	10
	26 – 30 years old	19	38
	31 – 35 years old	14	28
	36 – 40 years old	10	20
	Above 40 years old	2	4
	Total	50	100
Tribe	Yoruba	29	58
	Igbo	18	36
	Hausa	2	4
	Others	1	2
	Total	50	100
Marital Status	Single	37	74
	Married	13	26
	Divorce	0	0
	Widow	0	0
	Total	50	100
Level of Education	Pry. Six Certificate	6	12
	S.S.C.E	10	20
	OND/NCE	25	50
	HND/B.Sc.	9	18
	M.Sc.	0	0
	Total	50	100
Monthly Income	~~₦~~ 18, 001 – ~~₦~~ 36, 000	3	6
	~~₦~~ 36, 001- 54,000	17	34
	~~₦~~ 54, 001- ~~₦~~ 72, 000	21	42
	~~₦~~ 72, 001- ~~₦~~ 90, 000	9	18
	Total	50	100

Source: Author's Field Survey, 2022

4.2 Operational Characteristics of Operators

Moreover, Table 2 below shows the operational characteristics of operators. The study revealed that 56% reported operating as a full-time, averaging around above 7 hours per day, 24% works within 5-7 hours per day while 20% reported to work within 2-4 hours per day. Also, majority (80%) of the operator in the study area have been in that business for 5-7 years while 2-4 years representing 20%. The study also revealed that majority of operators (70%) is into service delivery fully while 30% have other jobs they are engaged in. In addition, 58% of the respondents affirmed to using app based while 42% receives call to deliver and 34% attested to being rated after service delivery while 16% are not rated due call based delivery.

With respect to challenges that poses threat to service delivery of dispatch riders, in Table 2, 6% attested to having issues with mobile internet services which may cause delay in delivery while 94% affirmed that their company provided them good internet access. Delay in getting goods from the company is another challenge that causes delay in delivery, 12% experienced this in the course of operation while 88% said they receive goods from the company on time. On the notion of impatient and rude customers, 46% attested to have encounter with rude and impatient customers while 54% affirmed to have no such experience. 26% affirmed to operation of task force as a challenge while 74% see their duty as normal routine. Combined order and meeting up with customers goods delivery on time is another challenges, 76% see this as a challenge while 24% are up to the task of delivering combined orders.

Table 2: Operational Characteristics performed by the Operators

Variables	Range	Frequency	Percent
Operational Hours	< 2 hours	0	0.0
	2 – 4 hours	10	20
	5 – 7 hours	12	24
	> 7 hours	28	56
	Total	50	100
Years of Experience	< 2 years	0	0
	2 – 4 years	10	20
	5 – 7 years	12	24
	> 7 years	28	56
	Total	50	100
Other sides Jobs	Yes	35	70
	No	15	30
	Total	50	100
Service Delivery Platform	App based	29	58
	Call	21	42
	Total	50	100
Level of Rating after Delivery	Very Poor	0	0
	Poor	0	0
	Good	10	20
	Very Good	15	30
	Excellent	25	50
Rating on Satisfaction	Total	50	100
	Yes	36	72
	No	14	28
Challenges faced in the course of Delivery	Total	50	100
	Mobile internet service	3 (6)	47 (94)
	Delay in getting goods from the company	6 (12)	44 (88)
	Impatient and rude customers	23 (46)	28 (54)
	Task force	13 (26)	37 (74)
	Combined orders	38 (76)	12 (24)

Source: Author's Field Survey, 2022

4.3 Perception of End Users

Table 3 below shows the perception of end users on e-hailing services in relation to service delivery. On teleshopping, 19% shop online daily, 36% do teleshop once a week, 36% shop monthly while 12% shop online when needs arises. Also, on the usage of e-hailing services, 23% affirmed to use it for food delivery from fast food outlet, 37% attested to receiving mail through e-hailing while 40% use it for package delivery ordered online. In addition, 64% of end users place order more using mobile app (64%), some respondent use phone call (8%) to order foods from restaurants with logistics services while others use website (28%) in placing orders. Also, 87% agreed that online shopping is effective more than physical shopping while 13% affirmed to shopping online is not effective due to service delivery and other challenges arising from shopping online. The Table 3 also shows why users choose the e-hailing service, 63% of the end users choose e-hailing services because of its availability while 37% do not base their reasons on availability. Affordability is another reason why people will patronize goods and services in Nigeria, 67% users attested to e-hailing being affordable rather than go for physical shopping while 33% affirmed to the services being expensive. Service quality is a key factor to service delivery, 49% choose to use e-hailing service delivery because of the service quality while 51% considered it not the reason to use the service. With regards to quick service delivery, 78% attested to using e-hailing service delivery because of the quick service delivery while 22% affirmed no to the reason. Lastly, 46 users affirmed customer's services being the reason they patronize e-hailing service while 54 users do not have such reasons to patronize e-hailing services.

In addition, Table 3 shows satisfaction with service delivery. 65% agreed that they are satisfy with the service delivery, since they can choose to get all of their items in one delivery, delivery by appointment, free delivery, pay on delivery, express delivery and same day delivery. 35% of the respondents said they are not satisfied with the service delivery. The end users that said no to satisfaction with service delivery stated their reasons, some were of the opinion that product delivery was delayed or did not arrive, item on the website did not match the delivered item, product were damaged upon arrival, package was incomplete, and had to pay to return items.

Table 3: Users' Perception of E-hailing Services

Variables	Indicators	Frequency	Percent
Teleshopping	Daily	19	19
	Once a Week	33	36
	Monthly	36	4
	Others	12	2
	Total	100	100
E-hailing Usage	Food	23	23
	Mail	37	37
	Others	40	40
	Total	100	100
	Mobile App	64	64
Placement of Order	Phone Call	8	8
	Website	28	28
	Total	100	100
Effectiveness of Shopping Online	Yes	87	87
	No	13	13
	Total	50	100

Reason for choosing E-hailing Service	Availability	63	37
	Affordability	67	33
	Service quality	49	51
	Delivery	78	22
Satisfaction with Service Delivery	Ability to have my goods delivered on time		
	customer service	46	54
	Yes	65	65
	No	35	35
Quality of Service Delivery	Total	100	100
	Effective	51	51
	Ineffective	42	42
	Uncertain	7	7
	Total	100	100

Source: Author's Field Survey, 2022

5.0 Conclusion and Recommendations

The findings on the study of operations of e-hailing transport services conducted in the study area revealed that operators (most especially dispatch riders) of e-hailing transport services in the study area hold relatively high levels of educational qualification: According to the survey, 51% of e-hailing drivers hold a tertiary qualification as their highest level of education, while 30% have completed secondary school and only 3% are educated up to a primary school level. This suggested that the industry offers an alternative livelihood opportunity to educated individuals who are unable to secure formal sector employments.

Meanwhile, E-hailing platforms often support driver workers in acquiring the consumer and productive skills that are crucial in driving youth employment in the digital economy. 88% of the surveyed e-hailing drivers reported that they received training during the on boarding process with an e-hailing platform, and 76% of respondents said that the platform had helped them with a system to better manage their work transactions.

The e-hailing industry has low barriers to entry; participation of women is still very low. Only 1% of drivers interviewed were women, suggesting that the industry still has some way to go to become a more gender-inclusive source of employment. Findings further revealed the challenges faced by dispatch riders in the course of delivery which include impatient customers in the course of operations, some customers will place an order and expect the delivery service to arrive within a few minutes and customers may take up to 20 minutes to come out. With regards to end users perception on dispatch riders, majority of the end-users sees teleshopping as an effective means of shopping for packages, goods and foods. The end users perception on dispatch riders delivery services varies from individual to individual and the perception is limited to a certain extent with the availability of the proper connectivity and the exposure to the online shopping.

Conclusively, e-hailing transport services as a new type of digitally enabled work brings the promise of many benefits to workers, given the low barriers to entry, but there are also challenges to be overcome. With the growing economy and the convenient communication channels, demands for more personalized and faster delivery services are increasing, especially in the metropolitan area where more enterprises are located in high buildings.

In view of the outcome of this study, it is therefore recommended that the constituted authorities most especially labour authorities and transport regulators should work together with e-hailing platforms and development practitioners to monitor and track developments in

this world of work. In other words, there is need to ensure that regulation introduced for the industry including taxation policies is evidence-based and aligned with the contemporary realities to facilitate sustainability of platforms as well as operators livelihoods.

In addition, development practitioners currently in e-hailing industry must develop a good understanding of how platforms enable tech-enabled can improve distribution of goods and services and objectively improve livelihoods of the various actors in the e-hailing industry.

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