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Uber: examination of socio-economic situation of its clientele and security components in Lagos

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Abstract

This work provided empirical examinations on the determinants of Uber's passengers' characteristics and the security components of its operation in Lagos. Two sets of respondents participated in the study. Multistage and random sampling techniques were used in selecting each set of participants. 122 passengers and 69 drivers participated in the study. Three hypotheses were tested, results from the regression model showed the five selected socioeconomic variables explained a paltry 5% of the variance and were not a significant determinant of Uber's patronage ($R^2 = .0.55$, $F(5,117) = 1.27$, $p > .005$). Furthermore, an independent t-test result indicated that there is a significant difference between the perceptions of female passengers and male on how secured Ubers are. Lastly, regression showed that there is a significant relationship between the perceptual beliefs of how secured it operating environment is and the preference for it rather than convectional cabs ($F [1, 68] = 8.36$ $P < .005$) with an R^2 of .11). The paper suggests key sustainable practices that could engender the growth of Transport Network Companies (TNCs).

Keywords Uber · Socioeconomic status · Security · Safety · Gender perceptions · Gig economy

Introduction

Although African cities are late entrants into the digital ride-sharing phenomenon when compared to cities in the western world, the novelty has caught on like wildfire since its ground-breaking introduction by Uber (the American owned e-ridesharing group) in 2013. As of 2016, research statistics has it that there are 56 e-ridesharing services available in 21 out of the 54 African countries (Oreva 2016; Lee 2019). Lagos, Africa's

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most densely populated city has fourteen of such e-ridesharing organizations, which by far is the highest when compared with other cities in the region (Oreva 2016; Lee 2019). There are some salient factors which fuels the popularity of e-ridesharing platforms in Nigeria's commercial capital. First, is the intractable Lagos traffic problem which makes intra-city movement within the metropolis a difficult task. With the globally trumpeted successes of e-ridesharing companies in the achievement of effective scheduling, prevention of security problems, resolving social discomfort associated with sharing private spaces in transit buses, and a more objective costing system in most cities where it is operational (Rayle et al. 2016; Lee et al. 2017), certain categories of Lagos residents sees the unbelievable opportunity to resolve the city's transportation problem in the introduction of these e-ridesharing organizations. Second, is the pervasive popularity of Information and Communication Technology (ICT) among the young and upwardly mobile Nigeria population (110 million of Nigeria's population are in the Millennials and Generation Z cohorts). ICT adoption for both business conceptualizations and personal use has grown tremendously in the last two decades in Nigeria. Statistical figures from Nigeria Bureau of Statistics (NBS 2018) showed that ICT contribution to the Nigerian economy has grown to 13% from 2% in the last one decade. Statistics from the same body also showed that the numbers of Nigerians who are using mobile phones have also increased exponentially from 36 million to 172 million in the same period. Fast on the heels of these aforementioned facts is the reality that the various efforts of Lagos state government to resolve the transportation challenges being faced by the metropolis has not been sufficient in resolving a rather hydra-headed societal problem (Mobereola 2009; Ajayi 2017). Perhaps finally, is the subtle way in which the e-ridesharing phenomenon as the evolvement of the gig economy has become a critical tool for government policy makers and passengers of these e-ridesharing services to guaranteed better public transport security system in Lagos. It is an aphorism that these e-ridesharing outfits are generally assumed to increase public transport security system in most cities where they are operational (Oreva 2016; Cetin 2017; Lee et al. 2017; Berger et al. 2018; Eisenmeier 2019; Scarlett et al. 2019). This positive testimonial of e-ridesharing outfits as a possible tool for enhancing security of passenger lives and properties was one of it endearing qualities to Lagos metropolis government administrators before it introduction (Okogba 2018a).

It has been observed that these e-ridesharing companies generally classified themselves as technology companies or Transportation Network Companies (TNCs) instead of core transportation organizations (Lee et al. 2017; Clewlow and Mishra 2017; Scarlett et al. 2019). It is the belief of some scholars that the adoption of such a nebulous nomenclature by the TNCs smacks of a vagarious attempt to abdicate responsibilities and liabilities that could crop up from legal issues arising from possible security breaches that could result from the operation of their outfits (Macmurdo 2015; Nerinckx 2016; Schaller 2018). While findings from various studies agreed that the emergence of TNC has improved the public transport system in most urban centers where they are operational (Lee et al. 2017; Clewlow and Mishra 2017; Scarlett et al. 2019), other commentaries on the discourse detailed how various security, safety, and regulatory concerns constituted barriers against broader adoption of TNC in some cities (Dylan 2018; Eisenmeier 2018; Venkatesh 2019). For example, while TNCs has been absorbed as part of the public transport system in many cities in the United State of America (USA), the European Union (EU), Asia and Africa. Their operations are

however not allowed in most cities in Germany, while it has been banned in London, Copenhagen, Budapest, Sofia, Abu Dhabi, and Kuwait city for various reasons both-ering on their disruptive tendencies of the regulatory regime of public transport modus operandi (Dylan 2018; Chaudhry et al. 2018; Venkatesh 2019).

Although studies which examined how various aspects of TNCs safety and regula-tory components affected their acceptability by the general public appeared trite, a noticeable lacuna exists in the literature on how the Social Economics Situation (SES) [age, gender, income, education and job] of the passengers of TNCs influenced its acceptability in a sub-Saharan Africa developing economy. Recent findings suggested the existence of a causality between SES of passengers and their inherent proclivity to be victims of road crashes (Van den Berghe 2017; Ajayi and Mazinyo 2020). This research, therefore offered an opportunity to investigate if there is a relationship between SES of Uber's passengers' and their perceptions of how secured it is. Also, the importance of this study revolves around the fact that it is one of the first quantitative studies which provided an insight on how security perceptions of drivers on their operating environments predicted their choice of driving (or partnering with Uber) as against convectional cabs in the study area.

Literature review

There has been growing interests from both the academic community and the business world centred on the understanding of different business dynamics of various e-ridesharing outfits operational in different part of the world (Chen and Sheldon 2016; Cetin 2017; Malin and Chandler 2017; Shookoyar 2018; Chaudhry et al. 2018; Sun and Ding 2019). Some of these aforementioned studies examined impacts of different regulatory frameworks put in place to govern operations of these e-ridesharing plat-forms in various parts of the world (Rassman 2014; Macmurdo 2015; Hall and Krueger 2015; Redfearn III 2016; Rogers 2015; Scarlett et al. 2019; Sun and Ding 2019). For example, Rogers (2015) posited that it would be unfair to claim that Uber operational economic success in New York is a derivative of the organization much touted "regulatory arbitrage or other malfeasance" as it relates to the compliance to extant stipulations guiding their operations. He argued that rather than attributing the business success of Uber in New York to an 'unsubstantiated' belief that both the business executives (which handles the backend operation) and the drivers (who interfaces with the public) are adept in beating regulatory frameworks guiding their operations, Uber business success (according to Rogers 2015) stemmed more from their positive effects "on consumers welfare through the positive usage of data on passengers and drivers behaviour". Rogers further opined that the Uber team and the City's regulatory body leveraged the availability of these data to make regular informed business decisions which engender growth by "ensuring safety and rooting out discrimination against passengers". Another area that has enjoyed investigative attention from scholars is the existence of a likely causality between the emergence e-ridesharing outfits and fairer market driven pricing system in the public transportation system in nearly all cities they are operational in (Chen and Sheldon 2016; Malin and Chandler 2017; Shookoyar 2018). There is almost an unanimous agreement among the research community that the achievement of lower price of e-ridesharing services triggers other positive

outcomes such as: lowering the probability of one taking the chance to driver one's self (decreasing the numbers of vehicles within the urban transport system), increasing the demand for deeper physical/social bonding (among urbanites), reduction in the incidences of Driving Under Influence (DUI) and lowering the rates of Road Traffic Accidents (Owens and Jackson 2011; Chaudhry et al. 2018). This study is different from all these aforementioned researches because it filled an important gap in the body of available studies on e-ridesharing services by providing an objective analysis of the security components of Uber services. This is done by employing scientific techniques to examined perceptual analyses of passengers and drivers views on how secured they believed Uber services are in Lagos metropolis. While it is a truism that some researches has examined some aspects of safety and security concerns of e-ridesharing services (Macmurdo 2015; Lee et al. 2017; Chaudhry et al. 2018), the focus and findings from these researches differs' from the present research. For example Lee et al., utilized university undergraduates as respondents (homogeneous population) to examined passengers' perceptions on three main e-ridesharing concerns (security, safety, and surcharge justification), and their influences on patronages of e-ridesharing services. Findings from their study, (Lee et al. 2017) showed that safety, security and surcharge justifications are significant predictors for the patronage of e-ridesharing services among the respondents. While not taking anything away from the relevancy of the findings from their study, Lee et al. (2017) admitted that the use of a homogeneous population (all university undergraduates) which was relatively small in size (less than 100 respondents) limited the possibility of making of an informed personal/business decisions on a critical factor such as the security architecture of Uber operations. Another salient reality which this research brought to the fore is how the security consideration informed drivers (partners) decisions on opting for Uber driving as against convectional cabs/car-hire services. Findings from some recent researches have shown that drivers in the public transport system are reporting security concerns in the course of their works (Scarlett et al. 2019; Ajayi and Mazinyo 2020). Most studies that examined security concerns of public transport system did so by solely investigating passengers' perceptions (Delbosc and Currie 2012; Ajayi and Ajayi 2013; Lee et al. 2017; Chaudhry et al. 2018). Recent findings have shown that public transit drivers might also be at the receiving end of security challenges within the public transport system (Eisenmeier 2019; Ajayi and Mazinyo 2020). A good example can be gleaned from Eisenmeier (2019) work, who anecdotally observed that Uber drivers in Mexico believed that security and safety concerns from armed robbery attacks fuelled their desire to partner with Uber among other culinary benefits. Unlike Eisenmeier's work which utilized largely qualitative techniques of interviews and literature search, this study provided an opportunity for the scientific investigation of the perceptual analysis of Uber drivers' views on how security outcomes informed their choice of Uber driving as against convectional cabs in Lagos metropolis.

To achieve the study objectives, the following constructed hypotheses are tested:

- H1: Socioeconomic Status of Ubers' passengers significantly predicted its patronage as public transport in Lagos metropolis.
- H2: Gender differences significantly influenced the perceptions of passengers' assessment of Ubers' security components.

H3: Perceptual beliefs of Uber drivers on how secured the operating environment of the public transport system in Lagos significantly predicted the choice of Uber driving rather than conventional cabs.

Material and methods

This study employed a quantitative technique. Ethical consideration for the research was obtained from the ethical committee of the University of Fort Hare and Redeemer's University. Each respondent was duly informed of his/her ethical rights before being sampled. Getting Uber to give data of their partners and passengers appeared to be an impossible task in the developing world as the organization cited ethical concern against such (Eisenmeier 2019). The Multistage and random sampling techniques are used in selecting participants for this study. Due to its virtual hailing nature, Uber passengers are more difficult to access than ordinary taxi passengers, however, Uber admitted that over 80% of their trips generally originated and terminated in six (6) locations within the metropolis (The Palm Shopping Mall, Victoria Island, Ikeja City Mall, Murtala Muhammed International Airport, Adrenaline Sport Bar, Lagos State Teaching Hospital, Ikeja and Eko Hotel and Suites, Victoria Island) [Uber 2019]. Three (3) out of these 6 sites are located on the mainland while the other three are sited on the Island, Lagos metropolis is spatially separated into two (2) parts (the mainland and the island). Three of these sites (which represented 50% of these locations) that are located on the mainland section of the metropolis are selected for this study. These are; the Murtala Muhammed International Airport at Ikeja, the Ikeja City Mall and the Lagos State Teaching Hospital Complex Ikeja. Uber publicly admitted that they had nearly 180,000 registered passengers and 5000 partners (drivers) Lagos metropolis as of 2018 (Uber 2019; Okogba 2018b). The sampling took place over a period of 3 months and drivers on the waiting line in each of the three locations were randomly selected as respondents. The second car on the line was randomly picked after which both driver and passenger (s) were given the questionnaires. Two sets of questionnaires were prepared, one for drivers and the other for passengers.

The questionnaires contained pre-tested items which measured the study objectives. Each of the three selected sites was visited for a month and in all the study spanned a period of three months. The surveys for the passengers were comprised of four sections, and it was organized thus: i) socio-economic demographics of respondents ii) perceptions of respondents on the safety and security components of Uber iii) respondents travel pattern and the influence of Uber on such. iv) suggestive hints on to improve safety and security components of Uber. The second research instrument was designed for the drivers and it had four sections, which are: i) socio-economic attributes of the drivers ii) personal assessment of drivers on the operational regime guiding the operations of Uber. iii) perceptions of drivers on how secured Uber is as part of the public transport system. iv). roles that Uber's security consideration have on the decision of drivers/partners. For the distribution of questionnaire designed for drivers, 111 respondents were randomly sampled and 69 (62.16%) questionnaires were retrieved for the study, whilst for questionnaire designed for passengers, 204 respondents were randomly sampled while 122 (60%) questionnaires were successfully retrieved for analytical purposes.

Scale development

While there are different researches which examined the influence that passengers' security concerns had on modal preferences in transport studies, there are little pieces of evidence of studies which measured the differences in the perception of Uber passengers on gender basis. For scientific measurement of the variables, Likert-like scale was used. Some of the variables like the assessment of safety and security components of Uber from the passengers' perspectives have scales developed and utilized for them in some earlier researches (Delbosc and Currie 2012; Bayuk 2013; Lee et al. 2017). On the other hand, fresh operational definitions to measure items were constructed to evaluate variables that seemed not to have been previously used in past researches. To this end, measurable operational definitions were provided for constructs like 'preference for Ubers' driving rather than conventional cab because of security consideration'. A pre-field exercise helped in ensuring the validity and reliability of the research instruments. Additionally, the Cronbach alpha test was done on each of the constructed multi-items' instruments in order to observe their internal reliability and ability to effectively measure the research variables. A Cronbach's alpha lower than 0.60 means poor reliability, values between 0.6 and 0.7 are acceptable and values equal to or higher than 0.70 indicate good scale reliability (Churchill 1979; Simchi-Levi et al. 2003; Quesada et al. 2012; Ajayi 2016). The safety subscale which consisted of 10 items have a Cronbach's alpha of .80 ($\alpha = .80$), security subscale with 8 items .78 ($\alpha = .78$), operational regime guiding Uber with 7 items .69 ($\alpha = .69$), preference for Uber driving with 8 items because of security consideration .74 ($\alpha = .74$). Descriptive and inferential statistics are used to analyze the data and to test the derived hypotheses.

4.2 Results

Table 1 is dedicated to the analysis of the socio-economic status of the passengers of Uber in Lagos metropolis. The breakdown of the age analysis indicated that the Millennials and Generation Z constituted the bulk of Uber passengers in the study area. 76.22% of the respondents are among these two demographic cohorts, results from recent studies in Europe and the US posited that these cohorts which are between the ages of 40 and 15 years are in the front seat of those who patronize the novel TNCs (Ranzini et al. 2017; Taylor 2017; Dimock 2019). Statistics have it that Millennials who are described as being 'highly tech-savvy' constituted 25.5% or more than a quarter of American population who are registered Uber's customers, while Generation Z (who are described as 'digital natives') are expected to fuel the ranks of users significantly as they gradually enter the labor market in coming years (Taylor 2017; Top Employers Institute 2019). Nigeria which has a figure in excess of 52% of the estimated 200 million of her population situated below 40 years has enormous potential for growth of TNCs and other digital inspired start-ups (NBS 2018). The gender analysis of the respondents painted a revealing picture, 40.16% of the respondents are male, while the greater proportion of 59.84% are females. There are shreds of empirical evidence that showed that younger female gender (students, professionals, and nursing moms) appeared to be more at home riding on different TNCs than their male counterparts (US Bureau of Labor Statistics 2017; Williams 2018). The analysis of the educational background of the respondents showed that they are highly educated,

Uber: examination of socio-economic situation of its clientele and...

Table 1 Socioeconomic situation of Ubers' passengers in Lagos State

Description	Frequency	Percentage
Age		
21–25 years	15	12.30
26–30 years	16	13.11
31–35 years	34	27.86
36–40 years	28	22.95
41–46 years	20	16.39
46–50 years	4	3.28
51–55 years	3	2.46
55 years and above	2	1.63
Total	122	100.0
Gender		
Male	49	40.16
Female	73	59.84
Total	122	100.0
Marital Status		
Single	84	68.85
Married	29	23.77
Divorced	9	7.38
Total	122	100.0
Educational Qualification		
OND	16	13.11
BSc./HND	63	51.63
Postgraduate	42	34.42
Others	1	0.84
Total	122	100.0
Nature of work/Occupational Type		
Self employed/Artisans	11	9.03
Civil servants	27	22.13
Public servants	19	15.57
Entrepreneurs	37	30.32
Business owners	28	22.95
Total	122	100.0
Average monthly income		
80,000-130,000	16	13.12
131,000-180,000	15	12.30
181,000-230,000	46	37.70
231,000 and above	45	36.88
Total	122	100.0

Source: Author's Fieldwork 2019

Nigeria with an adult literacy rate of 51% which placed it in 177th position of the ranked 197 countries (WorldAtlas 2019), can be safely rated as a rank outsider when adult literacy level of nations are considered. The high level of literacy observed among the respondents could be an indication that Uber clientele are drawn from the largely young upwardly elitist group in the Nigerian society. Additionally, the table indicates the occupational distribution of the respondents, not surprisingly, more than half of the population (62.29%) are self-employed business owners or entrepreneurs. This trend of growing numbers of entrepreneurs among these cohorts appeared global because statistics showed that the Millennials and Generation Z in the US are attuned to being self-employed more than any cohort in recent history (US Bureau of Labor Statistics 2017; Williams 2018). Most of the Uber passengers earn more than the minimum wage benchmark of ₦30,000 set by the government. 74.58% of the respondents earn a monthly income that ranges from ₦180,000 and above. This fact further laid credence to the earlier assertion that Ubers' clientele in Lagos metropolis might likely be elitist.

Inferential statistics

Hypothesis one Socio-Economic Situation does not significantly influence the patronage of Uber services. The hypothesis was tested using multiple regressions and the result is presented in the Table 2 below:

Multiple regression analysis was used to test if the Socio-Economic Situation of respondents significantly predicted participants' patronage of Uber as public transport in Lagos metropolis (Table 2). The results of the regression indicated the five predictors explained a paltry 55% of the variance ($R^2 = .055$, $F(5,117) = 1.27$, $p > .005$). It was found that the Socio-Economic Situation of the Uber's passengers do not significantly predicted its patronage in the study area. The result further indicated that of the five independent variables (Table 2), it was only age of the respondents ($\beta = 0.01$, $t = .029$; $p < .05$) that significantly predicted patronage of Uber in the study area, while gender ($\beta = 0.46$, $t = 2.09$; $p > .05$), Educational qualification ($\beta = 0.18$, $t = 1.07$; $p > .05$), Average income ($\beta = -0.03$, $t = -.20$; $p > .05$) and Occupational distribution ($\beta = -0.15$, $t = -1.5$; $p > .05$) do not significantly predicted the patronage of Uber as part of the public transport system in Lagos metropolis (Table 3).

Hypothesis two Gender differences significantly influenced the perceptions of passengers' assessment of Ubers' security capabilities. The hypothesis was tested by using t-test and result gotten is presented in Table 4 below:

The second hypothesis employed an independent t-test to see if there are significant differences between the perceptions of male and female respondents on how secured Ubers are. The result from the statistical analysis (Table 4) indicated that there was a significant difference in the perception of how secured Uber are considered as part of the public transport system for male ($M = 5.55$, $SD = 1.26$) and female ($M = 4.89$, $SD = 1.84$) gender; $t(117) = 2.73$, $p = 0.05$. These results suggest that there are gender disparities in the perceptions of how secured Ubers are considered part of the public transit system in the study area. Based on this result, therefore, gender differences definitely influences how Uber passengers evaluated the security components of the TNC in Lagos metropolis. Specifically, these results suggest that males ($M = 5.55$, $SD = 1.26$) perceived Ubers as being more secured than females ($M = 4.89$, $SD = 1.84$).

Uber: examination of socio-economic situation of its clientele and...

Table 2 Summary of Multiple Regression showing the prediction of socio-economic situation on patronage of Uber services

Predictor	B	T	P	R	R ²	F	p
Age	0.01	.029	<.05				
Gender	0.46	2.09	>.05				
				0.23	0.55	1.27	>0.05
Educational Qualification	0.18	1.07	>.05				
Average Income	−0.03	−.20	>.05				
Occupation	−0.15	−1.5	>.05				

Dependent Variable: Patronage of Uber services

This result seems to agree with the views and findings of other researchers who generally believed that even with the vastly improved secured measures available in most TNC, there are still reasons for the female gender to be cautious when taking trips on TNCs (Carpentier 2014; Lavrinc 2016; Williams 2018; Paul 2018; ALARMS 2019).

Hypothesis three Perceptual beliefs of Uber drivers on how secured the operating environment of the public transport system in Lagos significantly predicted the choice of Uber driving rather than conventional cabs. The hypothesis was tested using linear regression and the result is presented in Table 5 below.

This model takes the form of a statistical equation where:

$$Y = \beta_0 + \beta_1 X$$

Y represents the outcome variable and X represents the predictor variable. In this case, we can say:

The proportion of preference for Uber driving as against convectional cabs = $\beta_0 + \beta_1$ Ubers' perceived improved security potential or = $1.421 + (.868 * \text{Ubers' perceived improved security potential})$ [Table 6].

Table 3 Coefficient^a

Model	Unstandardized Coefficients		Standardized Coefficient Beta	T	Sig
	B	Std Error			
1. Constant	1.267	.939		1.349	−.180
Age	.001	.156	.003	.029	.977
Gender	0.46	.222	.210	2.089	.039
Edu	0.18	.170	.127	1.068	.288
Avinc	−0.03	.149	−0.26	−.216	.829
Occup	−0.15	.097	−.147	−1.57	.129

a. Dependent Variable: Patronage of Uber services

Table 4 Summary of t-test table depicting the Influence that Gender Differences has on passengers' perceptions on the security capabilities of Uber services

Gender	N	Mean	S.D	Df	T	P
Male	49	5.55	1.26			
Female	73	4.89	1.82	117	2.37	< 0.05

A simple linear regression was calculated to predict that drivers preferences' for Uber driving among cab drivers rather than conventional cabs was based on the perceptual belief that Uber provided a more secured operating environment for operators in Lagos metropolis. A significant regression equation was found ($F [1, 68] = 8.36$ $P < .005$) with an R^2 of .11. It was found that perceived Ubers' perceived potential for more secured operating environment significantly predicted preference for Uber driving ($\beta_1 = .87$ $p < .005$). The final predictive model was:

The proportion of preference for Uber driving = $1.421 + (.87* \text{perceived Ubers' better /secured operating environment})$.

Discussion

The results from this research showed that Uber popularity and general acceptability in the study area is driven by the younger, urbane, highly educated and entrepreneurial attuned segment of Lagos population. Findings from this study provided infallible credence to the fact that the growth of Uber in the Lagos market is being catalyzed by the appeal it holds for the younger population of the city. Therefore, it will not be a spurious claim to posit that Ubers' market in Lagos is presently driven by an elitist clientele. Recent findings have shown that the ability to gain technological access to a novel digital product which is seen as being exotic, and perhaps if such novel device have decreased accessibility for others—particularly via price—influences the perception of value for some categories of buyers (Rogers 2015; Long 2018; Igbal 2019). An overwhelming majority of Uber drivers affirmed that they preferred Uber driving rather than conventional cabs because they believed that it provides a more secured environment. They significantly believed that such positive security attributes of Uber over other mode of transport in Lagos could be a key to the future of Lagos public transit

Table 5 Anova^a

Model	Sum of Squares	df	Mean Square	F	Sig
1. Regression	2.341	1	2.341	8.365	.005 ^b
Residual	19.030	68	1.104		
Total	21.371	69			

a. Dependent Variable: Preference for Uber driving

b. Predictors (Constant) Uber's Market Potential

Table 6 Coefficient^a

Model	Unstandardized Coefficients		Standardized Coefficient Beta	T	Sig
	B	Std Error			
1 Constant	1.421	.533		2.24	.026
Uber's Perceived environment	.868	.272	.331	2.892	.005

a. Dependent Variable: Preference for Uber driving

market [proportion of preference for Uber driving = $1.421 + (.87* \text{ due to it Uber's perceived more secured working environment})$]. The bulk of the passengers (72.95%) also posited that Uber has become their first option when considering a modal choice for public transit in the metropolis. With a burgeoning youthful population of Generation Z (42% of the population are below 15 years and the median age for the entire population is 17.5 years) who are to enter the labor market in the coming years, the client base or market share for Uber and other potential TNCs is definitely on the upward swing in Lagos and by extension Nigeria (NBS 2018).

The disparity in perceptions of how secured Uber is as a public transit along gender lines is however a cause for concern. While statistical figures from other cities in developing and developed worlds on gender perceptions of security components (prevention of sexual abuse, mugging, kidnapping, robbery, affray and murder) are not readily available, the result from this study which showed that the female gender ($M = 4.89$, $SD = 1.84$) significant perceived [$t(117) = 2.73$, $p = 0.05$] Uber as being less secure than male ($M = 5.55$, $SD = 1.26$) could be a red flag going forward for all stakeholders. Statistics from this study shows that Uber is quite popular in the study area where the female gender is nearly a third (59.84%) of the randomly sampled respondents. However, there have been frequent reportage of security breaches (sexual abuse, affray, kidnapping, robbery) involving Uber passengers and violent car-jackings, murders and robbery from the perceptions of Uber's drivers in the metropolis (Usman 2018; Warimi 2019; Bosun 2019; Odita 2019). In order to improve the perception of security of the female gender Uber management should consider recruiting or encouraging Uber female drivers. Pieces of evidence gleaned from findings in other climes showed that female passengers reported that they feel more secure with female Uber drivers than their male counterparts (Williams 2018). Insecurity for obvious reasons is a cause for concern among Uber drivers too and that for a good reason, a huge proportion of the drivers (56.52%) identified the danger to their lives and properties as their biggest operational constraints. This is definitely a big threat to the sustainable development of the industry going forward, there have been more than three reported cases of murders of Uber drivers and tens reported cases of carjackings in the last one year in Lagos metropolis (Usman 2018; Warimi 2019; Bosun 2019; Odita 2019).

Business implications and conclusion

This exploratory research undertook a robust analysis of the nature and the complexity of Uber's passengers' socio-economic attributes with its attendant effects on patronage

of the TNC. The study equally unearthed the security fears nursed by the female gender (that surprisingly showed a proclivity for having the preponderance in market share when compared with the male based on statistics obtained). Lastly, the relationship between the perceptions of Uber drivers on how secured the e-ridesharing outfit is and how such perceptions informed their preference for diving it rather than the conventional cabs was dissected. It is an incontrovertible assertion that Uber (and by extension other TNCs) has come to stay as part of the public transit the system, the benefits of such development if maximize in a growing metropolis like Lagos are legion. However, Uber's growth is dogged by an Achilles' heels quite capable of either slowing the growth process or totally sounding its death knell if care is not taken. Chief amongst these worrisome signs are the problem of insecurity. Unless safety and security issues are addressed urgently, interests in Uber services in Lagos metropolis might wane as both the drivers and the biggest block of the client (young female passengers) are unequivocal in their identification of insecurity as a major source of worry. Security experts are unanimous in their belief that the overall surveillance system in Uber vehicles must be continuously improved (Carpentier 2014; Lavrinc 2016; Paul 2018). Some of such suggested improvements include the installation of tamper-proof video cameras in all Uber vehicles, disablement of child lock features on passenger doors and devising new app buttons on Uber apps that send messages to Uber consumer report, local police and a designated safety contact during rides (Paul 2018). Also, there might be the need for Uber to totally eradicate its 'flying zone' policy which allowed drivers to 'switch off the app and take passengers on their own'. This policy takes drivers off the TNC digital radar and allowed them to make extra money without being indebted to it. Confession from arrested carjackers and murderers of Uber drivers in the Lagos indicated that they find drivers who took the option (which those criminals slyly lured the drivers to) soft targets. Another suggestion is that Uber should encourage female Uber drivers to join the ranks of their partners by providing greater incentives for them. This study established the existence of a huge market for female partners in the city and research findings posited that female passengers are generally safer with female drivers than vice versa (Williams 2018; Igbal 2019).

Limitations and areas of future research

As should be expected, this study is not without some limitations. The first limitation concerns the limited scope of the study, although the respondents who participated in the study are randomly sampled representative of the general population it is advocated that a study which will involve respondents being sampled from all six (6) identified sampling sites in the metropolis and possibly the use of secondary data to complement primary data be carried out. Findings from such study will shed deeper light into the underlying influences of the security on the operation of Uber in Lagos. The second limitation of this study is that while the findings could be a strong policy instrument in guiding the operation of Uber (and by extension other TNCs) in Lagos, holistic adaptation of these findings in other cities where Uber is operational in Nigeria and sub-Saharan Africa could be misleading as these cities have different socio-cultural complexities which governs their public transit systems.

References

- Ajayi AP, Ajayi DD (2013) Areal differentiation in crime in public transit terminals in Ibadan metropolis. *J Transp Secur* 6(1):1–12. <https://doi.org/10.1007/s12198-012-0099-2>
- Ajayi AP (2016) Analytical study of supply chain collaboration guiding forestry products supply in a developing economy. *Int J Business Performance and Supply Chain Modelling* 8(4):277–299
- Ajayi AP (2017) Assessment of the influence of Lagos bus rapid transit scheme (BRT-lite) on road traffic crashes (RTC) on Lagos Mainland-Island corridor. *The Open Transportation Journal* 11:3–00. <https://doi.org/10.2174/187444780171101>
- Ajayi AP, Mazinyo SP (2020) Socio-economic situation and substance use disorder influences on safety practices among truckers. *The Open Transportation Journal* 14:78–85. <https://doi.org/10.2174/1874447802014010078>
- ALARMS.ORG (2019). Nearly a quarter of women have turned in Uber drivers for uncomfortable behavior. <https://www.alarms.org/uber-lyft-womens-safety-report/>
- Bayuk JL (2013) Security as a theoretical attribute construct. *Computers & Security* 37:155–175
- Berger T, Benedikt C, Levin F, Danda R (2018) Uber happy? work and wellbeing in the “Gig economy” working paper to be presented at the 68th Panel Meeting of Economic Policy October 2018. Accessed 12 August, 2019. https://www.oxfordmartin.ox.ac.uk/downloads/academic/201809_Frey_Berger_UBER.pdf
- Bosun T (2019 June 10) Man arrested in Ogun for robbing Uber driver in Lagos. *Punch newspaper*, Retrieved from <https://www.punchng.com>
- Carpentier M (2014 Nov 14) Uber should be keeping women safe, but Uber has a woman problem. Accessed 4 September, 2019. Retrieved <https://www.theguardian.com/commentisfree/2014/nov/18/uber-woman-problem>
- Cetin, T. (2017). *The rise of ride sharing in urban transport: Threat or opportunity*. Urban Transport Systems. <https://doi.org/10.5772/66918>. Accessed June 30, 2020
- Chaudhry B, Yasar A, El-Amine S, Shakshuki E (2018) Passenger safety in ride-sharing services. *Procedia Computer Science* 130:1044–1050
- Chen MK, Sheldon M (2016) Dynamic pricing in a labor market: surge pricing and flexible work on the Uber platform. In *EC* (p. 455)
- Churchhill GA (1979) A paradigm for developing better measures of marketing constructs. *J Mark Res* 16:64–73
- Clewlow R, Mishra G (2017) Disruptive transportation: the adoption, utilization, and impacts of ride-hailing in the United States. Institute of Transportation Studies University of California, Davis. Research report – UCD-ITS-RR-17-07. www.its.ucdavis.edu
- Delbosc A, Currie G (2012) Modelling the causes and impacts of personal safety perceptions on public transport ridership. *Transp Policy* 24:302–309
- Dimock M (2019 January 17) Defining generations: where Millennials end and generation Z begins. Pew Research Center. Retrieved August 2 2019. <https://www.pewresearch.org/fact-tank/2019/01/17/where-millennials-end-and-generation-z-begins/>
- Dylan S (2018) The places where Uber is banned. Accessed 4 July 2018. <https://news-get-com.cdn.ampproject.org>
- Eisenmeier, S. (2018). *Ride sharing platforms in developing countries: effects and implications in Mexico City*. Pathway for Prosperity Commission Background Paper. Series: No 3, Oxford, U.K. Downloaded from: <https://www.pathwayscommission.bag.ox.ac.UK>. Accessed June 30, 2020
- Eisenmeier SRJ (2019) Ride-sharing platforms in developing countries: effects and implications in Mexico City. Pathways for prosperity commission background paper series; no. 3. Oxford. United Kingdom
- Hall JV, Krueger AB (2015) An analysis of the labor market for Uber’s driver-partners in the United States *ILR Review* 0019793917717222
- Igbal M (2019) Uber revenue and usage statistics. *Business of Apps* <https://www.businessofapps.com/news/author/mansoor-igbal/> Accessed 23 June 2019
- Jackson and Owens (2011) One for the road: public transportation, alcohol consumption, and intoxicated driving. *J Public Econ* 95:106–121
- Labor Force Statistics from the Current Population Survey* (2017). *U.S. Bureau of Labor Statistics*. https://www.bls.gov/cps/cpsaat_11.htm. Accessed 23 July 2019
- Lavrinc D (2016) Uber is quietly terrible for Women and Black people: Study. Accessed 3 September 2019. <https://jalopnik.com/uber-is-quietly-terrible-for-women-and-black-people-st-1788392405>

- Lee C, Rahafrouz M, Lee O (2017) What Are the Concerns of Using a Ride-Sharing Service?: An Investigation of Uber. Emergent Research Forum Paper. *Concerns in Ride-Share Use Twenty-third Americas Conference on Information Systems, Boston, 2017*
- Lee R (2019 January 13). Ridesharing in Africa may be the future of transportation. The Borgen Project <https://borgenproject.org/rideshare-in-africa-may-be-the-future-of-transportation/>
- Long MC (2018 March 16) Is social media making us elitist? Use brand platforms to encourage people to find contentment and happiness. March 16 2018. Accessed July 12 2019. <https://www.adweek.co>
- Macmurdo M (2015) Hold the phone! "peer-to-peer" ridesharing services, regulation, and liability, 76 La. L. Rev: Accessed July 13 2019. <https://digitalcommons.law.lsu.edu/lalrev/vol76/iss1/15>
- Malin BJ, Chandler C (2017) Free to work anxiously: splintering precarity among drivers for Uber and Lyft. *Communication, Culture & Critique* 10(2):382–400
- Mobereola D (2009) Africa first bus rapid transit scheme. The Lagos BRT-lite system. Sub-Saharan Africa transport policy program (SSATP). Discussion paper no 9. Urban transport series
- Nerincx S (2016) The 'Uberization' of the labour market: some thoughts from an employment law perspective on the collaborative economy. *ERA Forum* 17(2):245–265. <https://doi.org/10.1007/s10227-016-0439-y>
- Nigeria Bureau of Statistics (2018) [https://nigerianstat.gov.ng/elibrary?queries\[search](https://nigerianstat.gov.ng/elibrary?queries[search). Accessed 2 July 2019
- Odita S (2019 February 1) Woman-led robbery gang attack Uber driver. The Guardian Nigeria. Retrieved from <https://www.guardian.ng>. Accessed 2 September 2019
- Okogba E (2018a August 15) Uber monthly passenger base in Nigeria hits 267,000 *Vanguard Newspaper* Retrieved from: <https://www.vanguardngr.com/2018/08/uber-monthly-passenger-base-in-nigeria-hits-267000/>. Accessed 14 February 2019
- Okogba E (2018b November 7). Earning extra income through the gig economy. *Vanguard Newspaper*. Retrieved from: <https://www.vanguardngr.com/2018/11/earning-extra-income-through-the-gig-economy/> accessed 21 July 2019
- Oreva E (2016) State of ridesharing in Africa. <https://techcabal.com/2016/11/16/the-state-of-ridesharing-in-africa/>. Accessed on 4 August 2019
- Paul K (2018) Pamela Anderson claims Uber is not safe for women. Accessed 4 September 2019. <https://www.marketwatch.com/story/should-women-take-uber-class-action-lawsuit-blames-company-for-sexual-assaults-2017-11-16>
- Quesada H, Gazo R, Sanchez S (2012) Critical factors affecting supply chain management: a case study. In Groznik A (Ed.): *The US Pallet Industry, Pathways to Supply Chain. Excellence*, ISBN: 978–953–51–0367–7, InTech
- Ranzini G, Newlands G, Anselmi G, Andreotti A, Eichhorn T, Etter M, Hoffmann C, Jürss S, Lutz C (2017) Millennials and the Sharing Economy: European Perspectives. Report from the EU H2020 Research Project Ps2Share: Participation, Privacy, and Power in the Sharing Economy
- Rassman CL (2014) Regulating rideshare without stifling innovation: examining the drivers, the insurance gap, and why Pennsylvania should get on board. *Pitt J Tech L & Pol'y* 15:81
- Rayle L, Dai D, Chan N, Cervero R, Shaheen S (2016) Just a better taxi? A survey-based comparison of taxis, transit, and Ridesourcing Services in san Francisco. *Transp Policy* 45:168–178
- Redfearn RL III (2016) Sharing economy misclassification: employees and independent contractors in transportation network companies. *Berkeley Tech LJ* 31:1023
- Rogers B (2015) The Social Costs of Uber. University of Chicago Law Review Online. Vol 82, 1. Article 6. Accessed August 232,019. https://chicagounbound.uchicago.edu/uclrev_online/Vol/82/iss1/6
- Scarlett TJ, Kong H, Sui DZ (2019) Uber, public transit, and urban transportation equity: a case study in new York City. *Prof Geogr*. <https://doi.org/10.1080/00330124.2018.1531038>
- Schaller B (2018) The New Automobility: Lyft, Uber and the Future of American Cities. Brooklyn NY: Schaller Consulting. Accessed June 22, 019. <http://www.schallerconsult.com/rideservices/automobility.pdf>
- Shookoyar S (2018) Ride-sharing platforms from drivers' perspective: evidence from Uber and Lyft drivers. *International Journal of Data and Network Science* 2:89–98
- Simchi-Levi D, Kaminsky P, Simchi-Levi E (2003) Designing and Managing the Supply. Chain: Concepts, Strategies and Case Studies, McGraw-Hill, New-York
- Sun D, Ding X (2019) Spatiotemporal evolution of ridesourcing markets under the new restriction policy: A case study in Shanghai. *Transportation Research Part A* 130227–239. <https://doi.org/10.1016/j.tra.2019.09.052>
- Taylor K (2017 July 7) Millennials are reviving Uber during the darkest time in company history. *Business Insider*. Accessed September 2019. <https://www.businessinsider.com/uber-makes-major-gains-among-millennials-2017-7?IR=T>

Uber: examination of socio-economic situation of its clienteles and...

- Top Employers Institute (2019) Millennials are tech savvy. Gen Z's are tech natives. Accessed 2 August 2019. <https://www.top-employers.com>
- Uber (2019 March 4) Uber cities in Nigeria: From Abuja to Lagos. Accessed May 272, 019; <https://www.uber.com/en-NG/blog/uber-availability-nigeria/>
- Usman E (2018, March 21) How we killed Uber driver for his car-Ex-Convict. *Vanguard Newspaper*, Retrieved from <https://www.vanguardngr.com>. Accessed 30 August 2019
- Van den Berghe W (2017). The association between road safety and Socioeconomic Situation (SES). *An international literature review*, Brussels, Belgium: Vias institute – Knowledge Centre Road Safety
- Venkatesh KS (2019) List of Uber banned/non-existence Countries in 2019-Where opportunity awaits for you. <https://www.unicotaxi.com> Accessed on 12 July 2019
- Warimi U (2019 February 11) Victim colleague is our leader, says robber that killed Uber driver in Lagos. *Vanguard Newspaper*, Retrieved from <https://www.vanguardngr.com>. Accessed 31 Aug 2019
- Williams R (2018) Ridesharing and women: Benefits, barriers, and opportunities for progress. Uber Under the Hood Insights and updates from the Uber Comms& Policy team. <https://medium.com/uber-under-the-hood>. Accesed 10 July 2019
- Worldatlas (2019) List of Countries by Literacy rate. Accessed 23 August 2019. <https://www.worldatlas.com>

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