

# Journal of Economics and Business

**Adu Jack, John Kwame, Amoah, Emmanuel K. S., Hope, Eric, and Okyere, Frimpong. (2021), Should Ghana Legalize the Commercial Use of Motor Bikes and Tricycles as Means of Public Transport? A Case Study of Five Selected Regions in Ghana. In: *Journal of Economics and Business*, Vol.4, No.1, 214-239.**

ISSN 2615-3726

DOI: 10.31014/aior.1992.04.01.333

The online version of this article can be found at:  
**<https://www.asianinstituteofresearch.org/>**

Published by:  
The Asian Institute of Research

The *Journal of Economics and Business* is an Open Access publication. It may be read, copied, and distributed free of charge according to the conditions of the Creative Commons Attribution 4.0 International license.

The Asian Institute of Research *Journal of Economics and Business* is a peer-reviewed International Journal. The journal covers scholarly articles in the fields of Economics and Business, which includes, but not limited to, Business Economics (Micro and Macro), Finance, Management, Marketing, Business Law, Entrepreneurship, Behavioral and Health Economics, Government Taxation and Regulations, Financial Markets, International Economics, Investment, and Economic Development. As the journal is Open Access, it ensures high visibility and the increase of citations for all research articles published. The *Journal of Economics and Business* aims to facilitate scholarly work on recent theoretical and practical aspects of Economics and Business.



ASIAN INSTITUTE OF RESEARCH  
Connecting Scholars Worldwide



# Should Ghana Legalize the Commercial Use of Motor Bikes and Tricycles as Means of Public Transport? A Case Study of Five Selected Regions in Ghana

John Kwane Adu Jack<sup>1</sup>, Emmanuel K. S. Amoah<sup>2</sup>, Eric Hope<sup>3</sup>, Frimpong Okyere<sup>4</sup>

<sup>1</sup>Lecturer, School of Business, KAAF University College, P.O. Box WU 177, Kasoa, Central Region, Ghana. Email – bejackyac90@gmail.com

<sup>2</sup>Lecturer, School of Business, KAAF University College, P.O. Box WU 177, Kasoa, Central Region, Ghana. Email – amoah36@yahoo.com

<sup>3</sup>Lecturer, School of Business, KAAF University College, P.O. Box WU 177, Kasoa, Central Region, Ghana. Email – erickwekuhope@gmail.com

<sup>4</sup>Registrar, KAAF University College, P.O. Box WU 177, Kasoa, Central Region, Ghana. Email – frymps@gmail.com

Correspondence: John Kwame Adu Jack, Lecturer, School of Business, KAAF University College, P.O. Box WU 177, Kasoa, Central Region, Ghana. Email: bejackyac90@gmail.com

## Abstract

In the wave of raging debate, even on the floor of parliament, as to whether it would be expedient to commercialize Bikes' usage in Ghana, it is important to look at its benefits or otherwise. Hence, the study sought to show whether Ghana should legalize the commercial use of motor cycles and tricycles operations. The design was a descriptive study which used quantitative tool to show public acceptance or rejection of commercializing the use of motorcycles and tricycles in Ghana. The study was based on the use of questionnaires for the data collection and were analyzed using Microsoft Excel. The sample population considered was Five (5) Regions in Ghana which are Central, Greater Accra, Bono, Bono East and Northern Regions. Questionnaires of 460 were drawn for the study. It was found out, among others, that many of the riders do not possess licenses; riders are aware of robbery incidents perpetuated by their colleagues; police harassments and passenger pressure are strong reasons for not observing traffic regulations; unfavorable road architecture; the activity is a good source of income. It was therefore recommended that, the okada/pragia/keke/motor king/motor kia operations should be legalized for commercial use with regulations and strict compliance by actors or operators.

**Keywords:** Okada, Pragia, Keke, Motor King, Motor Kia, Motorcycles, Bikes, Tricycle

## 1. Introduction

A motorbike is variously defined as a small motorcycle with a low frame and small wheels and elevated handlebars in Oxford Dictionary which is echoed in Wikipedia as a human-powered (or gravity-powered) three-wheeler vehicle known as a motorcycle based on the same technology as a bicycle and powered by an electric

motor, motorcycle, scooter or car engine'. Some tricycles, such as cycle rickshaws (for passenger transport) and freight trikes, are used for commercial purposes, especially in the developing world, particularly Africa and Asia. A decline in organized public transport systems has led to rapid growth in non-conventional means of public transport, initially provided by minibuses and shared taxi/vans, and more recently by commercial motorcycles and tricycles.

Barnes (2005), defines transportation as the activity which primarily is concerned with providing an increasing human satisfaction through the changing of geographical location and the position of people and goods. Undoubtedly, transportation is considered a key factor in the socio-economic growth of all countries (Oduro, 2012; Healey and Ilbery, 1990). Agreeably, transportation is said to be efficient not only to facilitate spatial interaction and reduces the friction of distance, but also a precondition for effective economic, social and political development of a country (Keskinen, 2007; Healey and Ilbery, 1990). Transportation, irrespective of mode, serves as a conveyor belt for people to access goods and services and facilities across national boundaries. Hence, transportation cannot be detached from economic growth and therefore a strong bonding between the two (Rodrigue, 2017).

Agyemang and Panford (2006) posit that, economic growth of underdeveloped countries is a crucial factor for improvement of internal accessibility through the expansion of transportation networks that are important factors of economic growth. They were of the view that many social and political forces influence the process of transportation networks that are important factors for economic growth. Suffice its importance, there appears to be considerable setbacks in transportation network growth, especially, in developing countries due to high financial requirements for the sector's infrastructure commitments. This has led to the slow pace of economic growth in most countries in Africa, of which Ghana is no exception. Rodrigue (2017), posits that, transportation and the movements of people, goods and information have always been fundamental components of economies and the society in general.

The mobility requirement of an economy is the transportation systems that are evolving within a complex set of relationships between and among transport supply (Multi modal), reflecting the operational capacity of the road network and transport demand (Bardi et al., 2006; Rodrigue 2017). Economic growth has always been dependent on increasing the capacity and rationality of transportation. Because of the way in which contemporary cities and towns are planned and operated, there is usually a physical distinction between home and work, forcing people to move to work, to study and to leisure, and also to move temporarily for other activities. Business requires the transport of people to conduct (Bardi et al., 2006).

Accordingly, government recognizes the role transportation plays in Ghana in terms of economic growth and as a result has enacted an Act to regulate its activities (Agyemang and Panford 2006; Rodrigue 2017). A reliable and affordable road transport system plays a key role in the socioeconomic development of Ghana. Road transportation forms an important part of the socio-economic activities, facilitates the distribution of wealth through trade and employment opportunities in both urban and rural communities (Road Fund Act 536, 1997).

Considering the rapid growth of Ghana's population and urbanization, with the heavy vehicular traffics, bad road networks across the country and lack of many by-pass roads requires an alternative being motor bikes and tricycles services which is expected to take a center stage in the intra city and rural transport (Levy and Wong, 2010). Known by several names, the tricycle business is growing in popularity across Africa (especially in the low and lower middle-income countries) and Ghana in particular. Its many names on the continent include: Tuk-tuk (Eastern Africa - Kenya, Ethiopia, and Tanzania), Pousse-pousse (Madagascar), Keke and Okada (Nigeria), Raksha (Sudan), and Mahama Can Do and Nyaaba lorry in (Northern Ghana), Pragia, Okada and Aboboyaa in Southern Ghana (Levy and Wong, 2010).

In many developing countries such as Asia, motorcycles and tricycles are used as the main means of transportation, especially, among low-income urban dwellers and the poor (Dinye and Ahmed, 2015). The resort to motorcycles and tricycles as an alternative means of transport in solving urban mobility problems of towns in

Northern Ghana has introduced varying dimensions of issues and vices including traffic accidents and safety on the roads, registration, employment and robbery. Various researches have been conducted on the issues of motorcycle and tricycle traffic accidents, motorcycle and tricycle traffic management in motorcycle and tricycle dependent cities, and commercial motorcycle and tricycle operations among others (Banthia et al., 2006; Adesanya, 1998). In Kasoa in the Central Region, Accra in the Greater Accra, Techiman in the Bono East Region, Dormaa Ahenkro in the Bono Region and Tamale in the Northern Region, the motorcycle and tricycle transportation business (MTTB) is gradually taking over from the conventional Taxi Cabs as the main intra city commercial transport.

According to Bardi et al. (2006) and Rodrigue (2017), a growing share of wealth is linked to trade and distribution. As transportation has positive impacts on socioeconomic systems, there are also negative consequences such as fatalities during accidents, robbery attacks and mobility gaps. Recent years have also seen a growing recognition that certain segments of the society are disproportionately affected by transportation-related issues (Hanson and Giuliano, 2004). Developing transportation systems has been a continuous challenge to satisfy mobility needs, to support economic development and to participate in the global economy (Rodrigue, 2017).

Originally, Asia was known to be the continent which used motorcycles and tricycles as their major means of transportation. But in recent times, motorcycles and tricycles transportation have gained a solid root in African countries such as Kenya, Nigeria, Tanzania, Ethiopia and more recently Ghana. Although, the reality in Ghana suggests that commercialization of motorcycles and tricycles have come to stay, their operations are outlawed under Section 128(1) of the Road Traffic Regulations LI 2180, of 2012. Indeed, there is a growing concern whether to maintain the law and enforce it or to repeal it and promulgate a new law to legalize the commercial use of these motorbikes and tricycles. All these discussions are biased towards the proponents and opponents per their preconceived beliefs. The proponents believe that it will solve the gap in our transport sector in the urban and rural areas when and where motor vehicles/cars find it difficult if not impossible to ply at ease whilst the opponents posit that the accidents, disregard of road traffic signs and robberies are warnings enough to maintain and enforce the existing law. Since it is gradually showing that their operations have come to stay with its numerous benefits and, of course, the continuous reports of accidents, motorcycle related robberies and blatant disregard of motor traffic signs, it is imperative to seek the views of all those who matter in this sector of the socioeconomic setup to take a comprehensive decision on whether to repeal the law and promulgate a new law to legalize it for commercial purpose or maintain and enforce the existing law.

## **2. Review of related works**

### *2.1 Concept of transportation*

Transportation primarily involves the movement of goods and people. Since it is an activity which enables a person or a company to provide service to another person or company, it stands to reason that there must be rules of engagement or an understanding as to what sort of relationship should relate and govern the undertaking. Transportation creates, opens access to education, social facilities, health, industry, business, and commerce (Yeboah, 2015). For example, various studies reveal that public transport is more heavily influenced by the number of jobs in the city's downtown area than by almost any other factor (Barnes, 2005). The demand for travel takes place in a multidimensional setting. More recently, researchers have paid greater attention to other dimensions of choice, such as residential and job location, household automobile ownership, the time of day at which trips are taken, parking locations, and the duration of activities for which travel is undertaken, hence the introduction of the motorcycle and tricycle, (Barnes, 2005). Again, travel is a derived demand, usually undertaken not for its own sake but rather to facilitate a spatially varied set of activities such as work, recreation, shopping, and home life (Small and Verhoef, 2007; Obateru, 2005).

### *2.2 Mode of transportation*

Transportation modes are an essential component of transport systems since they are the means by which mobility is realized. Varieties of modes are grouped into three broad classes based on the medium of their activities: land, water, and air (Bardi et al., 2006; and Keskinen, 2007). Each mode has its own requirements and properties and is adapted to serve the specific demands of freight and passenger traffic (Delta Regional Authority Report (DRA), 2008). This gave rise to mark differences in the ways the modes are deployed and utilized in different parts of the world. At the same time, however, passenger and goods activities are becoming increasingly separated across most modes (Rodrigue, 2017).

According to Eddington (2006), the creation of the transportation network influences economic geography, such as the location of its economic activity. The transportation network influences the location of industry; they revolutionize passenger movement and are critical in the creation and growth of many urban areas. The subsequent development of the strategic road network plays a key role in the relocation of new, light industries, attracted by market access and new clusters. At an urban/metropolitan level, there is strong evidence that inaccessibility to particular areas can have major effects on the location and pattern of development. In the longer term, accessibility changes can influence the form and density of the urban area, including the balance between the use of different transport modes, (including walking and cycling for shorter trips and public transport for longer trips) (NZP, 2014).

### **2.3 Theories of transportation and development**

#### *2.3.1 Transportation and economic development theory*

This theory was proposed by Rodrigue and Notteboom (2017). According to the theory, development is related to the welfare of a society through appropriate social, political and economic conditions. The expected outcomes are quantitative and qualitative improvements in human capital (e.g. income and education levels) as well as physical capital such as infrastructures, (utilities, transport, telecommunications). While in the previous decades, development policies and strategies tended to focus on physical capital, recent years have seen a better balance by including human capital issues (Lau1996). Irrespective of the relative importance of physical versus human capital, development cannot occur without both. As infrastructures cannot remain effective without proper operations and maintenance while economic activities cannot take place without an infrastructure base (Rodrigue and Notteboom, 2017).

This is even more so in an economy where economic opportunities have been increasingly related to the mobility of people, goods and information, (Lau 1996). A link between the quantity and quality of transport infrastructure and the level of economic development is apparent. High density transport infrastructure and highly connected networks are commonly associated with economic growth (Lau 1996). The writers argued that when transport systems are efficient, they provide economic and social opportunities and benefits that result in positive multipliers effects such as better accessibility to markets, employment and additional investments. When transport systems are deficient in terms of capacity or reliability, they can have an economic cost such as reduced or missed opportunities and lower quality of life. At the aggregate level, efficient transportation reduces costs in many economic sectors, while inefficient transportation increases these costs. In addition, the impacts of transportation are not always intended and can have unforeseen consequences. For instance, congestion is often an unintended consequence in the provision of free or low-cost transport infrastructure to the users (Lau, 1996).

Transportation provides market accessibility by linking producers and consumers so that transactions can take place. A common fallacy in assessing the importance and impact of transportation on the economy is to focus only on transportation costs, which tend to be relatively low (Banister and Berechman, 2000). Transportation is an economic factor of production of goods and services, implying that it is fundamental in their generation, even if it accounts for a small share of input costs. This implies that irrespective of the cost, an activity cannot take place without the transportation factor. Thus, relatively small changes in transport cost, capacity and performance can have great impacts on dependent economic activities. An efficient transport system with modern infrastructures facilitate many economic changes, most of them being positive. Transport also

contributes to economic development through job creation and its derived economic activities. Producers and consumers take economic decisions on products, markets, costs, location and prices which are themselves based on transport services, their availability, costs, capacity, and reliability (Banister and Berechman, 2000).

## **2.4 Ghana Transportation system**

In lieu of the contribution of transportation in the socio-economic growth of Ghana, the government has since formed a Ministry to craft policies that will make possible provision to various centers including market, health facilities and others to enhance regional integration, cooperation and good governance (Ministry of Transport Annual Report, 2017).

Accordingly, Bus transportation is the primary mode of public transport in almost every major city of Africa. Bus transport infrastructure is the modest, comprising mostly central terminals, bus stops, and in a few cases special bus lanes and streets (African Public Transport Association, 2010). The types of motor vehicles in urban areas comprise private cars, buses, trucks, motorcycle and tricycle and intermediate forms of transport such as bicycles (African Public Transport Association, 2010).

It is estimated that majority of the mini buses and other buses used in Ghana are second-hand. These second-hand buses are generally old aged, expensive to run and consume much fuel and need more repairs and are the cause of numerous road accidents in Ghana (Adams, 2004; Bonsu, 2015) The used-old-aged and poorly maintained vehicles produce deadly emissions and are environmentally unsuitable (Gillen, 1996). Arguably, the introduction of motorcycle and tricycle transportation system has contributed to the reduction in road accidents in Ghana especially in Kasoa, Accra and Techiman partly because people prefer patronizing the MTTB than the traditional method 'trotro' (GNA, 2017).

## **2.5 Motorcycle and Tricycle transportation system in Africa**

The motorcycle and tricycle transportation system are one of the vehicles of road transportation system which has recently taken a space in the transport system especially in Asia and Africa. A motorcycle often called bike, motorbike or cycle is a human-powered (or gravity-powered) two-wheeled motor vehicle. Motorcycle design varies to suit a range of different purposes: long-distance travel, commuting, sporting including racing and off-road riding. There are major types of motorcycles: street, off-road and dual purpose. Within these types, there are many sub-types of motorcycles for different purposes. Commercial motorbikes are popularly called 'Okada' in Kasoa, Techiman and Accra. A tricycle, often abbreviated to trike, is a human-powered (or gravity-powered) three-wheeled vehicle. Some tricycles, such as cycle rickshaws (for passenger transport) and freight trikes, are used for commercial purposes, especially in the developing world, particularly Africa and Asia (Quellin, 2011). In the West, tricycles are used primarily for recreation, shopping, and exercise. Tricycles are favored by children and senior adults alike for their apparent stability versus a bicycle; however, a conventional trike has poor dynamic lateral stability, and the rider must take care when cornering to avoid tipping the trike over (Quellin, 2011).

Tricycles are taxi-like modes that rely on comparatively slow, lightweight vehicles that provide lower quality services than exclusive ride taxis, although at considerably cheaper fares. In contrast to large vehicle services, they generally complement rather than compete with formal buses, trotros and taxis (Cervero, 2000). Other attributes such as entrepreneurialism, small or ageing vehicles usage for operation, low-performance service and high level of competition typical of public transit modes are also peculiar to tricycle (Cervero, 2000). The tricycles are used for garbage collection, and are produced in the workshop (Reinders, 2016). There are two main types of tricycles in Ghana which are used for commercial purposes. They are the cycle rickshaws (passenger tricycle) "Pragia" as popularly known in Techiman part of Ghana and freight tricycle which is also popularly called as "Motor Kia or Aboboyaa" (Motor King) in Ghana.

### *2.5.1 Mode of motorcycle and tricycle transportation in Ghana*

According to Wikipedia, motorcycles are of different modes which are street, off-road and dual purpose. They are suitable for two or three passengers at most with the rider inclusive. The riders are required to protect themselves with helmets and jackets, and other passengers are to be issued helmets. The motorcycles are vehicles with powerful diesel engines, and fuel tank capacity of 10 to 15 litres to cover about 200kms. According to Guillen and Ishida (2003), tricycles are of different modes. In Africa, Ghana to be specific, there are two main modes of tricycle, which are the passenger and freight tricycle (Njoh, 2007). The tricycles are vehicles with powerful diesel engines, and fuel tank capacity of 10.5 litres.

According to Green, (2011) many freight trikes are of the tadpole configuration, with the cargo box, (platform and many others) mounted on the front wheels. Freight trikes are designed for indoor use in large warehouses or industrial plants. Common uses include; delivery services in dense urban environments, food vending in high foot traffic areas (including specialist ice cream bikes) (Guillen and Ishida, 2003) and this is really common in Kasoa, Techiman, Dormaa Ahenkro, Tamale and Accra, where it is used for distributing bread and other food products. Its uses also include: recycling collections, warehouse inventory transportation and food collection.

## **2.6 Factors influencing commercialization of motorcycle and tricycle in developing economies**

The motorcycle and tricycle transportation is widely used in South Asia and Southeast Asia, and Africa where it provides essential employment for recent immigrants from rural areas, generally poor men (Njoh, 2007). In the 1990s and first decade of the 21st century, rickshaws (tricycle) became increasingly popular in Africa, where they provide urban transportation, novelty rides, and serve as advertising media (Greene, 2011). Guillen and Ishida (2003) also added that motorcycle and passenger tricycle is used as a means of transportation to places like office, market, school, hospital, recreational centers and other activities which were performed by taxis.

The vehicles are suitable for intra-city commuting and commercial passenger carriage with low fuel consumption (Declan, 2012). Motorcycles and tricycles can be found in many developing countries and some developed countries. In certain parts of Egypt, motorcycles and tricycles are used to access long streets where the use of taxi would be uneconomical, but not necessarily in poorer areas as Bangladesh, Cambodia, Gaza, India and some parts of Africa (Declan, 2012).

The transportation system in any nation is determined by the socio-economic and political needs of the society (Ayodele, 2009). Whereas the rate of growth in the nations' social and economic sectors far exceeds the provision of transport infrastructure and services that the people demand. As such, available resources in the transport sector cannot cope with the increasing movement needs of the people (Ayodele, 2009). Since there is rapid increase in urban population with the inherent transport sector infrastructure deficit, obviously, there is the need for motorcycle and tricycle to be considered as a means of public and or commercial transportation modes in most developing countries (Ayodele, 2009).

In realization of the effect of motorcycle and tricycle transport to urban transportation, the Federal Road Safety Commission (FRSC) organized a day stakeholders forum for agencies and operators of motorcycles and tricycles in Nigeria (Ayodele, 2009) and the theme of the forum was "Ensuring Safe Operations of Motorcycles and Tricycles in Nigeria." In the forum, the corps Marshal and Chief Executive of the FRSC saw the tricycle as having been accepted by various state governments in the country as a means of poverty alleviation and the need to regulate its operations for improved safety on the roads (Declan, 2012). The authorities in the FRSC in Nigeria realized that the tricycle has become a household name playing a pivotal role in the urban transportation system of the country. They also realized that the tricycle transport ease transportation problems and create avenue for self-employment of the unemployed and the jobless as commercial tricycle scheme popularly known as Keke Napep (Ayodele, 2009). According to Bamedele (2016), increasing the growth of commercial tricycle transportation system could attribute to some intrinsic benefits such as door-to-door service, easy movement during traffic congestion, have the ability to travel on poor road networks, and other social benefits to the people. This therefore means that, most at times the theoretical aspect is been degenerated by transportation experts on the traffic relevance of the tricycle, especially as a commercial means of providing mobility. However, most related aspects of transportation and its benefits such as employment has led to the introduction of the motorcycle

and tricycle transport in most developing countries and it is fast extending to consider in almost all international issues (Bamedele, 2016).

## **2.7 Motorcycle and Tricycle transportation systems and Local Economic Development (LED) initiatives in Ghana**

The economic base in the view of Helmsing (2001) and Schmitz (1995) refers to those activities which are used to change the conditions of individual in a locality through efficient (transportation). This economic base can be enhanced by the promotion of small to medium enterprises by having in place connected services such as transportation and freight (Helmsing, 2001). Microfinance, Small Loans Center and other Financial Institutions are some of the authorities in Ghana which provides productive activities in Kasoa, Techiman, Dormaa Ahenkro, Tamale and Accra. They introduced the motorcycles and tricycles to people in these localities to help reduce their poverty and unemployment (MASLOC, 2017).

Motorcycle and tricycle transportation system has been one of the basic transportation infrastructures which have been given much attention in Ghana due to the role it plays in LED (MASLOC, 2017). Čapkova (2005) in explaining LED initiatives listed a lengthy menu of possible local initiatives and classified them into five broad categories: financial tools; property-related tools; marketing; infrastructure development; and providing technical and information assistance. Dinye and Ahmed (2015) in their opinion also came out clear that motorcycle and tricycle transportation business is one of the initiatives in Ghana engaging the youth in employment, poverty reduction and other values. To add to the above, LED initiatives include: ensuring the functionality of local infrastructure in order to boost transporting goods and services. As a result, Hill and Nel (2004) are of the view that, the aim of any LED initiative is to increase the number of jobs available to the various communities through the creation or encouragement of enterprise and business activity (motorcycle and tricycle transport business). To achieve this, it is important that local entrepreneurial resources are mobilized so that the jobs created can be occupied by the local, poorer communities (Blakely, 1994). In fact, using motorcycle and tricycle transportation as a LED strategy is beneficial in considering the context of this study and as noted by Njoh (2007), motorcycles and tricycle transportation remains vital to growth and poverty reduction in Kasoa, Techiman, Tamale, Dormaa Ahenkro and Accra (Zuure and Yiboe 2017).

## **2.8 Challenges facing the motorcycle and tricycle transportation system**

Transportation facilities are vital in an effort to reinforce a country's or a region's position within the global economic system. According to Njoh (2007), transportation cost constitutes one of the important determinants of the costs of doing business or an activity. Poor transport infrastructure in particular and poor communication facilities in general, tend to isolate countries, thereby preventing their ability to contribute in global production of transportation networks. Despite the global trend towards liberalization, the absence of efficient transportation systems, high transportation costs, promise to effectively limit the participation of African countries in the globalization process. There is still the need to effectively manage transport system very well. Small and Verhoef (2007), noted that transportation potentially affects the nature of the urban area itself. If transportations were costless, participants in an economy would have no economic reason to locate close to one another. The study of this influence is clearly germane to transportation policy. To analyze it fully requires the full power of disciplines such as urban geography, urban economics, and regional science, which seek to explain the shape of urban development. Motorcycles and tricycles as mean of mobility have become issues for urban transport planners, especially among developing countries since it is taking over the urban transport system. While it is a valid mode for transportation and accessibility, it is not originally intended for public transportation. In fact, issues raised against motorcycles and tricycles-based public transports are that of traffic congestion, decrease safety and worsening environment. It is generally noted that private vehicle ownership tends to have a strong relationship with the economic situation of cities (Guillen and Ishida, 2003). According to Ipingbemi and Adebayo (2016), some operators complain of the escalating price of registration and lack of time because several hours would have to be devoted to it due to high level of bureaucracy involved. It follows, therefore that some of the vehicles may not be road-worthy. The implication is that such vehicles are liable to frequent breakdown (with its attendant economic loss to both operators and passengers) and are vulnerable to road crashes.

Possession of driving license and year of driving experience are important components of road safety. Ipingbemi and Adebayo (2016) added that only few operators have driving licenses. Some of the operators may not have gone through the required process of obtaining a license. Similarly, the fact that most of them do not possess a valid drivers' license implies that they may have learnt the art of driving through a friend or acquaintances. Studies have shown a positive relationship between possession of valid driver's license and traffic safety. Also, these motorcycle and tricycle operators are mostly underage since there are no rigorous regulations checking on them and they also cause road accidents (McKnight and Peck, 2003).

Extortion from law enforcement agents is one of the most important challenges facing the motorcycle and tricycle operators (SSATP, 2014). Mostly these motorcycles and tricycles are not being provided with parking places because their activities are not yet legalized into transportation planning in the country. Therefore, they park haphazardly on the road shoulders, at junctions (blocking entrance) and on the carriageway. This is dangerous for the operators of motorcycles and tricycles and other road users. Poor Parking (particularly on-street parking) is a major problem created by public transport in developing countries (Aderamo, 2012).

### **2.9 The underlying theory and hypothesis**

The concept of mobility has been variously interpreted, some inappropriately. In addition, the scale of application could have an important influence on the definition of mobility. For example, mobility at the metropolitan level might be defined differently than a mobility measure at the district or rural area, which itself might be very different from mobility as perceived by an individual traveler (NRC, 2002). Mobility is very relevant in transacting businesses and other economic growth activities. The effects of mobility could enhance or negatively affect in the performance of a business or a person's activities. According to Dinye and Ahmed (2015), motorcycle and tricycle transportation enhance individual's ability to move freely. They posit that, motorcycle and tricycle transport system contribute to economic growth of every economy which undertakes its operations with effective measures. Yeboah (2015) also agrees that tricycle transportation is one of the essential transport systems that contribute to the growth in the agricultural sector in most developing countries like Ghana. Increasingly, motorcycle and tricycle transport contribute a lot to mobility in areas where maneuvering of traditional four-wheeled transport is inaccessible making motorcycle and tricycle transport efficient and reliable (Dinye and Ahmed, 2015). According to Clarke (2003), commuting is a cost of economic growth. As cities become increasingly overpopulated, roads become clogged with increased numbers of private and public vehicles attempting to move large numbers of people. The end result is increased levels of wasted time spent commuting to and from work. The individual decision to commute to work in a private vehicle, rather than use public transport, is taken on grounds of convenience, comfort, and access. The demand for transportation within urban areas of developing countries, rise faster than the increase in income which is usually well in excess of unit, per capita incomes are rising more rapidly than in the advanced economies, and urbanization rates are rising more swiftly (Jolley, 2002). As a result, there is the need for legalization of the use of motorcycle and tricycle transportation business in Ghana. Indeed, this subject matter was debated at length on the floor of parliament of Ghana on 27<sup>th</sup> March, 2019 and reported by [Today Newspaper \(todaygh.com\)](http://todaygh.com) on 28<sup>th</sup> March, 2019 between Minority Chief Whip who doubles as Member of Parliament (MP) for Asawase Constituency in the Ashanti Region, in the person of Hon. Alhaji Muntaka Mubarak Mohammed who asked for the review of the existing law banning the commercial use of these bikes and First Deputy Speaker of Parliament also doubles as MP for Ashanti Bekwai, Hon. Joe Osei Owusu, who insisted that the safety concerns associated with the use of Okada and its excesses does not make it a viable mode of transport, hence the ban should be in place. Upon these revelations, it is important to empirically find out the viability or otherwise from operators, users and experts. This study therefore seeks to empirically test whether legalizing commercial operations of okada/keke/pragia/motorking, which have become accepted name for motorbikes and tricycles in Ghana, will help solve economic misfortunes of individuals, unemployment and various risks associated to bikes or not.

### **3. Methodology**

The study seeks to show whether Ghana should legalize the commercial use of motor cycles and tricycles operations. The design is a descriptive study which uses quantitative tool to show public acceptance or rejection

of commercializing the use of motorcycles and tricycles in Ghana. The study is based on the use of questionnaires for the data collection. The Questionnaires are administered to gather information on whether or not Ghana should adopt the use of motorbikes and tricycles for commercial purposes. The questionnaires are close-ended questions. The sample population considered for the research is Five (5) Regions in Ghana which are Central, Greater Accra, Bono, Bono East and Northern Regions. The target sample size of the study are towns and the cities in the five sampled regions including, Kasoa, Accra, Dormaa Ahenkro, Techiman and Tamale. Questionnaires of 460 are drawn for the study. The respondents are segmented into two groups comprising riders and owners of these bikes on one side and general public, i.e. those who patronize the services of the motor bikes/tricycles, officers from Driver and Vehicle Licensing Authority (DVLA), employees of some insurance companies, officers and men from Ghana Police Service and some health/medical practitioners. Non-probability sampling techniques are adopted. The data from the questionnaires are analyzed using Microsoft Excel, utilizing the Frequencies and Graphs.

#### 4. Results and Discussion

This chapter presents the analysis and interpretation of the data gathered from the respondents on the field. The total questionnaires for the sample size were 460 representing 100% of which 444 representing 96.5% were responded. This implies that the researcher has enough data to make an appropriate representation of the targeted sample size to make a good inference.

##### 4.1 Gender of Respondents

The study sought to understand the gender dynamics of those who patronize the services of the okada/pragia/keke business and the operators of same in Ghana. It is revealed in Fig 4.1.1

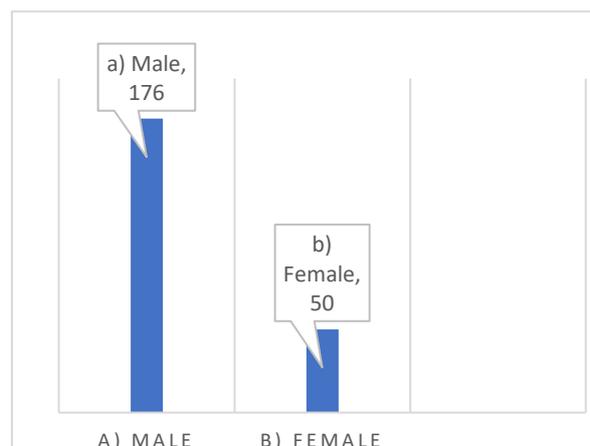


Figure 4.1.1: Gender for General Public

Source: Field Survey 2019

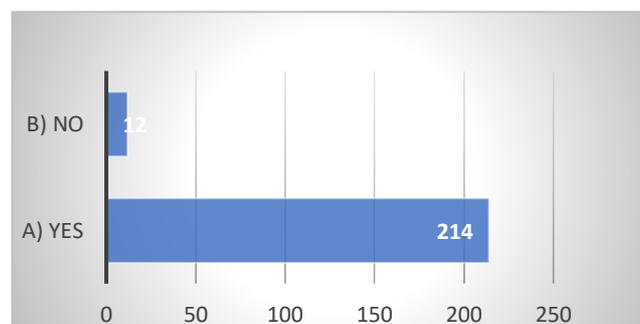


Figure 4.1.2: Have you ever joined or sat on or used a motor bike/tricycle?

Source: Field Survey 2019

Presenting the data, Fig 4.1.1 reveals that both genders are considered in the study to avoid bias in the data for this all-important national interest and reveals 77.9% males and 22.1% females, though, male dominated but do not discount involvement of female patronage.

#### 4.2 Personal experience as a passenger

In Fig 4.1.2, it is revealed that, out of 226 respondents of the general public and professionals with the exception of owners/riders/owner-riders, only 12 of the respondents constituting 5.3% said that they have never patronized the services of these okada/keke. This is an indication that 94.7% have actually patronized these services which would give an informed picture of what the study seeks to establish.

#### 4.3 Possession of valid riding license

In the event of trying to establish whether those who patronize these services know their right and are concerned of their protection, a further question was posed to the passengers if they have ever asked these riders/drivers whether they possess valid riding/driving licenses. Indeed, only 22.1% in Fig 4.1.3 indicates that they use to ask before patronizing their services. This really shows that many people are not interested in whoever rides/drives them to their destination. Their interests are not about their safety and could be a recipe to so many of the menaces and carnages caused by these bikes.

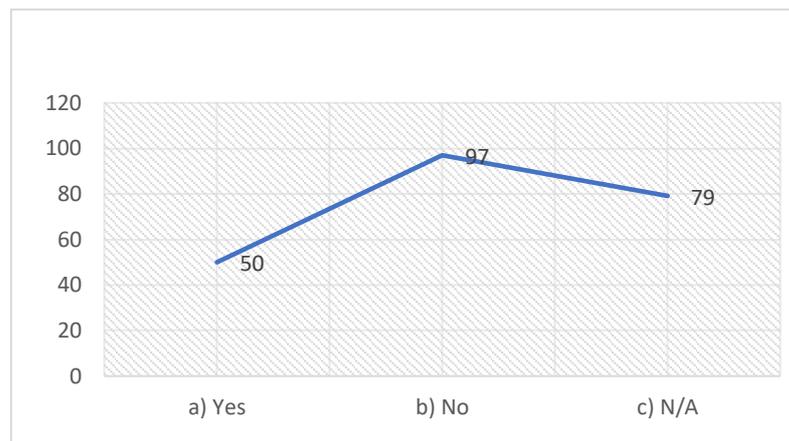


Figure 4.1.3: If yes, have you ever asked the riders whether they possess riding or driving license?

Source: Field Survey 2019



Figure 4.1.4: Do you possess a valid riding or driving license?

Source: Field Survey 2019

In fact, to further establish whether these riders/drivers possess valid licenses, Fig 4.2.4 analyzes the situation and shows that 69% of the riders/drivers of these motor bikes/okada/keke do not have or possess valid riding/driving licenses. Obviously with this revelation, the carnages caused by these riders/drivers are self-inflicted and avoidable accidents. Arguably, if these have well been structured and well-controlled, the rate of motor bikes accidents could reduce to the barest minimum.

**4.4 Valid registration and insurance**

The study continued its probe in the area of whether the okadas/kekes have valid Driver and Vehicle Licensing Authority (DVLA) registration numbers and valid commercial insurance cover. These are portrayed in Fig 4.2.3, Fig 4.2.5 and Fig 4.2.6.

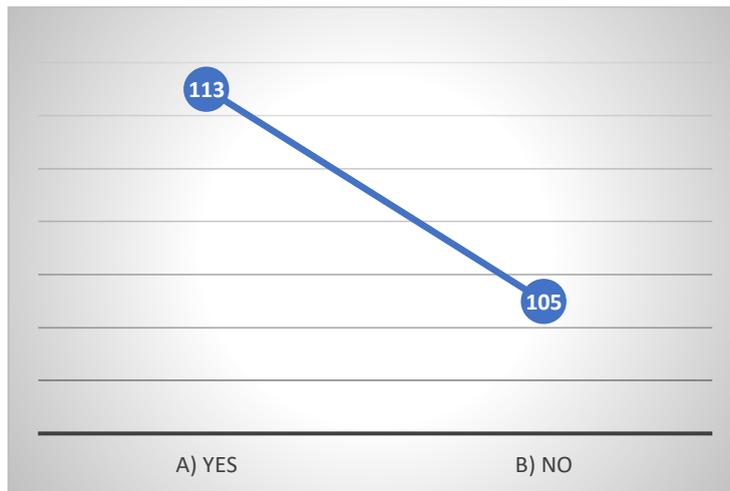


Figure 4.2.3: Does the Bike/Tricycle have valid registration from DVLA?

Source: Field Survey 2019

Although, 51.8% constituting 113 of the 218 of respondents have valid registration identification under the laws of the country, a whopping 48.2% do not possess valid registration which can have its own consequential effect which could lead to alleged robberies and or attacks said to have been perpetrated by these okada/keke riders after which their identification could be replaced with another invalid registration numbers.

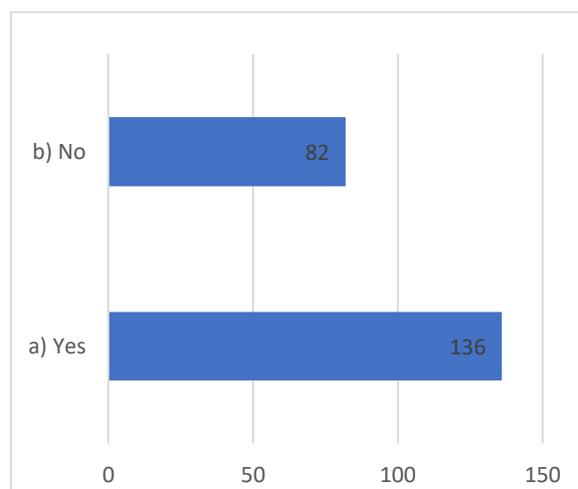


Figure 4.2.5: Is the Bike/Tricycle insured?

Source: Field Survey 2019

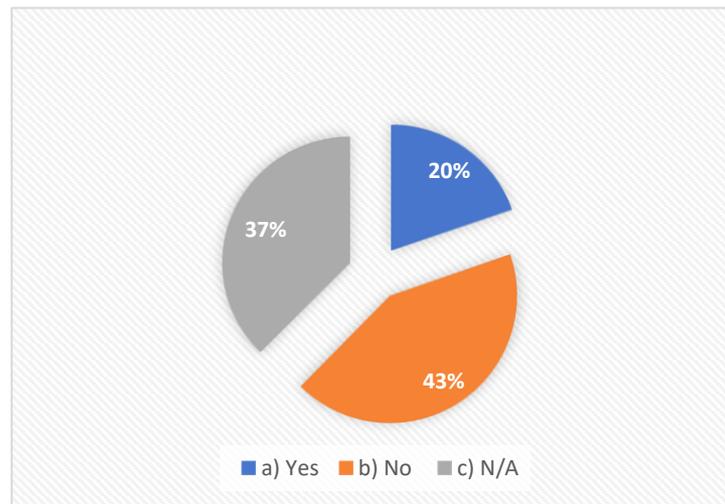


Figure 4.2.6: Does the insurance cover the passenger(s)?

Source: Field Survey 2019

One worrying situation about the use of okada/keke/pragia has been their involvement in accidents across the country. To ameliorate the suffering of affected persons involved in such accidents, not only with okada/keke/pragia but all transport modes, is commercial insurance cover for both the passengers and riders/drivers. It is as a result that the study sought to establish whether, indeed, these bikes have insurance and that the insurance covers their passengers. It was established in Fig 4.2.5 that 82 respondents representing 37.6% of the riders stated that their bikes do not have insurance and that of the 136 respondents representing 62.4% of the riders who claim to have insurance cover said that only 20% of their bikes have commercial insurance, covering their passengers as indicated in Fig 4.2.6. Indeed, these revelations are very worrisome and devastating to general public especially those who patronize the services of these operators due to the rampant reported accidents these Bikes/Kekes/Pragias are involved.

In trying to establish the many causes of Motorbikes related accidents, it is necessary to ascertain whether these many accidents are purely negligence or otherwise. It is as a result that the study intends to know the relationship between owners of the bikes and the Riders/Drivers. Fig 4.2.2 clearly indicate that majority being 140 respondents out of 218 are just employees whose aim is to make good sales for their owners while doing everything possible to get something daily for house chores or other unavoidable daily expenditure. In this instance, riders are usually hasty and particular about how much they are able to generate to take their responsibilities as enumerated earlier. Again, the study sought to find out whether it will be possible to do away with their commercial activities due to the numerous complaints of accidents. Fig 4.2.8 vividly shows how long they have been in operation.

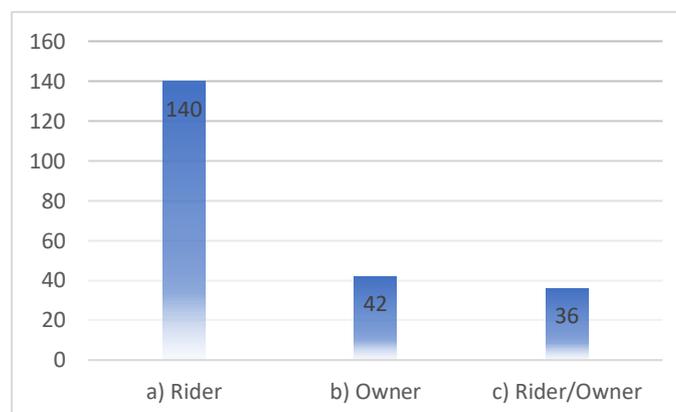


Figure 4.2.2: Are you the owner of the bike/tricycle?

Source: Field Survey 2019

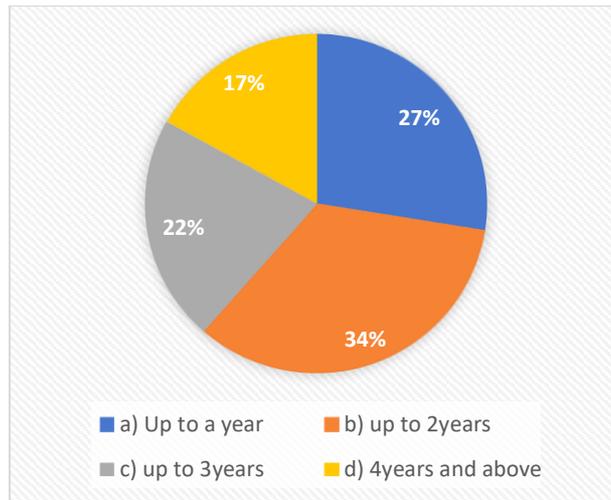


Figure 4.2.8: How long have you used a bike/tricycle for commercial purpose?  
 Source: Field Survey 2019

The data in Fig 4.2.8 shows that they have operated illegally but vividly for a long time which in effect has become an unprinted legally acceptable norm. The data in Fig 4.2.8 clearly shows that the commercial usage of these bikes/pragia/okada is gradually gaining grounds over the years from 17% to 61% over the last two (2) years.

Although, insurance seem to cushion victims if they are covered in one way or the other, which the data in this case do not suggest or support same, there are measures to undertake to avoid serious injuries and or fatalities. One of such measures is wearing of crush helmet when using motor bike as a rider or passenger. Upon this knowledge, the study revealed in Fig 4.1.8 and Fig4.2.27 that 102 passengers say they are not given crush helmet whenever they are picked by these riders. This is confirmed by about 35 riders of these motor bikes in Fig 4.2.27. Although, both riders and passengers have concurred there are some level of usage of the crush helmet, it is still not the best practices so far since it is prerequisite to use without exception.

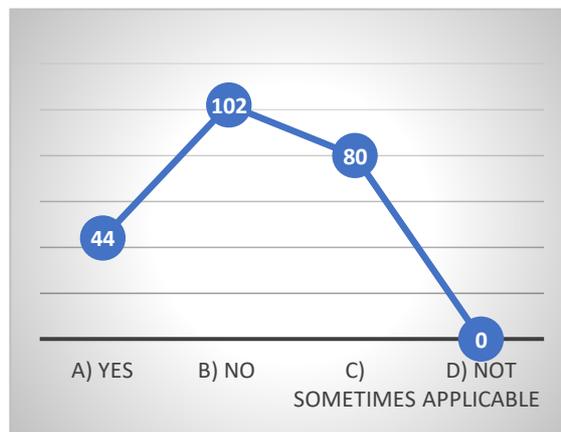


Figure 4.1.8: Do riders usually provide crush helmet for themselves and you?  
 Source: Field Survey 2019

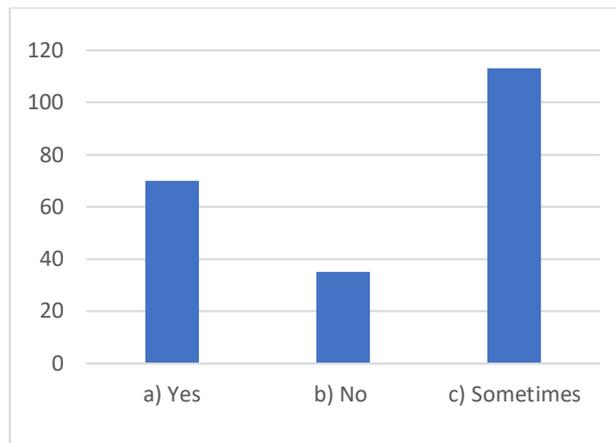


Figure 4.2.27: Do you provide Crash Helmet for yourself and your passenger(s)?  
 Source: Field Survey 2019

Since the study is interested in the safety of users of these bikes/okada/keke/pragia, it needed to find out what could be the causes of the rampant reported accidents. It is at that backdrop a data was collected on whether the riders observe motor traffic regulations which when not observed could be one of the recipes to accidents, i.e., crashes and or collisions.

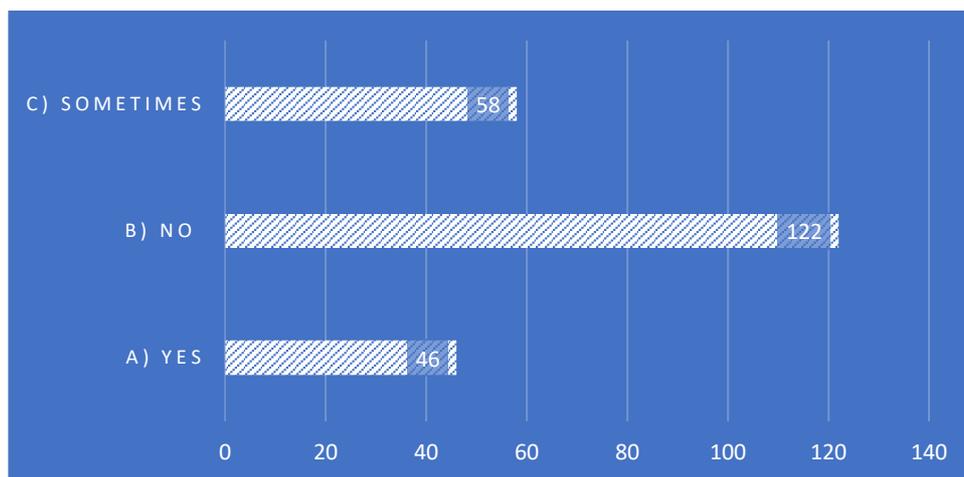


Figure 4.1.10: Do the riders observe motor traffic regulations?  
 Source: Field Survey 2019

In Fig 4.1.10, about 54% of passenger respondents insist that the riders do not observe road traffic regulations. Undoubtedly, accidents involving these bikes that have flooded the Ghanaian roads and streets are unavoidable with this kind of mentality and behaviour. Indeed, just a little over 20% disagree with the other passengers by defending the riders for adhering to the motor traffic regulations. Undoubtedly, many reported accidents of these bikes occur in traffic regulated areas, i.e., traffic light stops, intersections, road shoulders and roundabouts, as reported by various media houses as and when these accidents do occur.

Upon these revelations, the study intended to find out the reasoning behind the non-observance of the motor traffic regulations by some or many of the riders. It is depicted in Fig 4.2.11 that their actions depend on many factors.

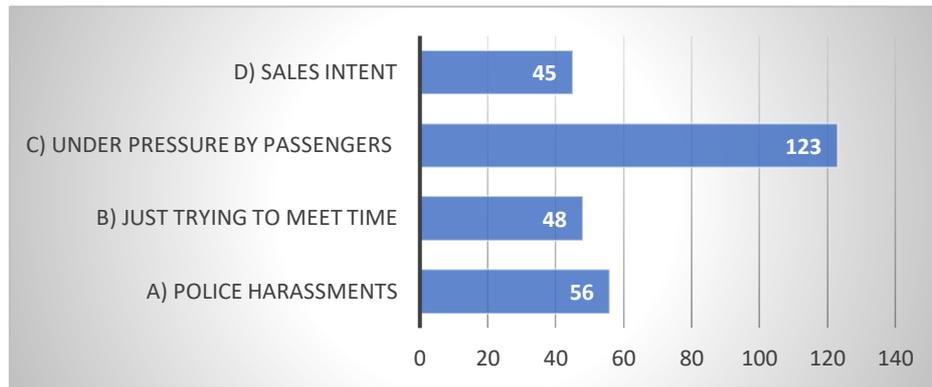


Figure 4.2.11: Some of you sometimes don't observe traffic regulations, why? You can choose more than one

Source: Field Survey 2019

Source: Field Survey 2019

In fact, the factors enumerated in Fig 4.2.11 are all significant as clearly shown by the data. However, the two most prominent amongst them are the Pressure from Passengers factor which constitute about 45% of the rider respondents and the Police Harassments which also constitute about 21% of same respondents. In any case, these should not be the reason to disregard guiding principles or rules in any profession, however, minimization of these factors could reduce if not eliminate various accidents caused as a result of failing to observe road traffic regulations.

In trying to authenticate the various reports of accidents involving these bikes, Fig 4.2.15 shows that 32% of rider respondents have themselves involved in accidents. Suffice it all is that, more than 75% of rider respondents have confirmed in Fig 4.2.17 of having witnessed or observed such accidents by other riders. Simply, this is an attestation of reported accidents which need urgent attention and solution.

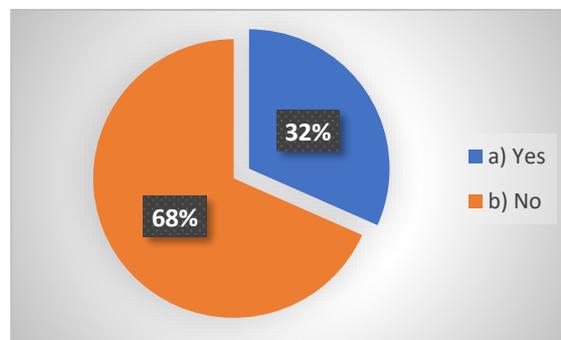


Figure 4.2.15: Have you had a Bike/Tricycle accident before?

Source: Field Survey 2019

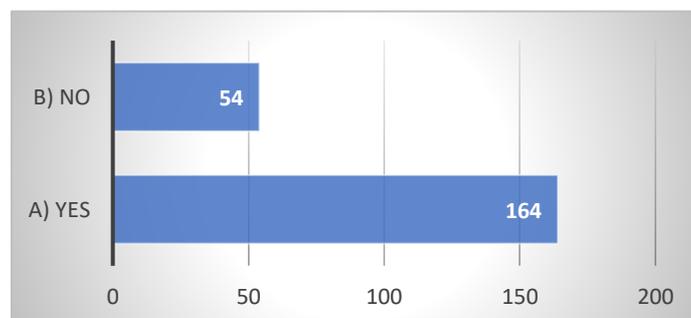


Figure 4.2.17: Have you seen or observed accidents of other riders before?

Source: Field Survey 2019

In addition to the risk of reported accidents as confirmed in Fig 4.2.15 and Fig 4.2.17, another serious risk which is also alleged to have been happening to passengers of these bikes especially, okada is the robberies that usually take place in obscure locations by some of the riders. Upon this widespread knowledge, the study intended to establish the truth or otherwise and why people still patronize the services of the okada. In spite of all the allegations of the robbery, 54% of passengers of these bikes, as depicted in Fig 4.1.5, have, surprisingly, indicated that they have nothing to fear. However, these responses are accepted because not many of them have been robbed by their riders as shown in Fig 4.1.6 where only 39 out of 226 respondents confirmed having been robbed by their riders. In any case, the 39 robberies cannot be swept under the carpet with the notion of not too many are involved. In fact, ideally, there should be zero tolerance for riders robbing their own passengers.

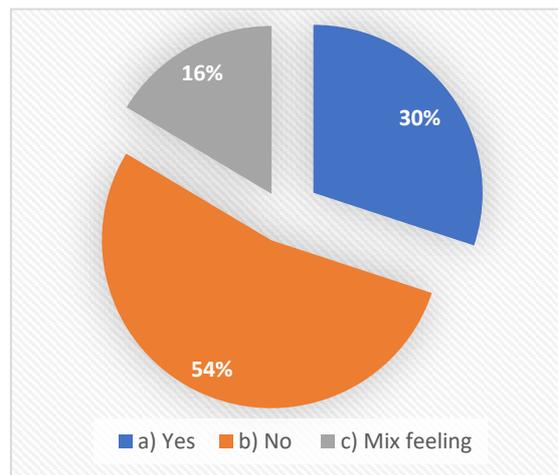


Figure 4.1.5: Whenever you pick these motor bikes/tricycles, do you entertain any fear of robbery?

Source: Field Survey 2019

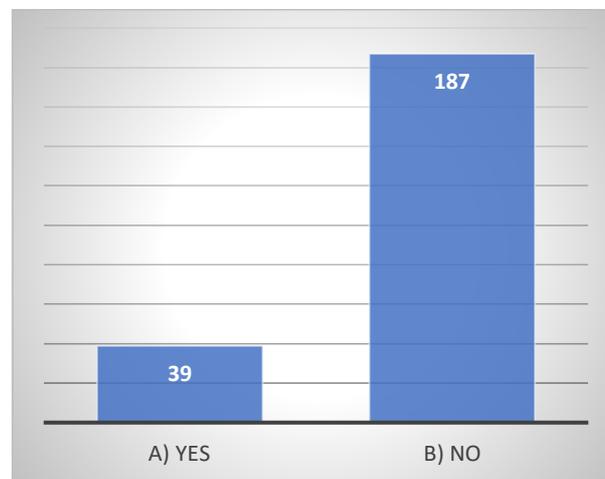


Figure 4.1.6: Have you ever been robbed by a rider?

Source: Field Survey 2019

In the event that many of the passengers have indicated that they do not entertain any fear of being robbed by their riders which is attributable to the low number of such incidences as depicted in Fig 4.1.6, the study probed further whether indeed the riders themselves are aware of such unacceptable behaviors of some of their colleagues. Fig 4.2.19 testifies that 56% of the riders are aware of the behaviors of some of their colleagues. It is instructive to note that, although the passenger respondents have indicated that not many have been robbed directly, 42% alleged to know people who have been robbed by their riders in Fig 4.1.7. With this knowledge, the questions begging for answers are: why are the other riders not reporting the bad nuts? Why are the passengers not perturbed and still patronizing?

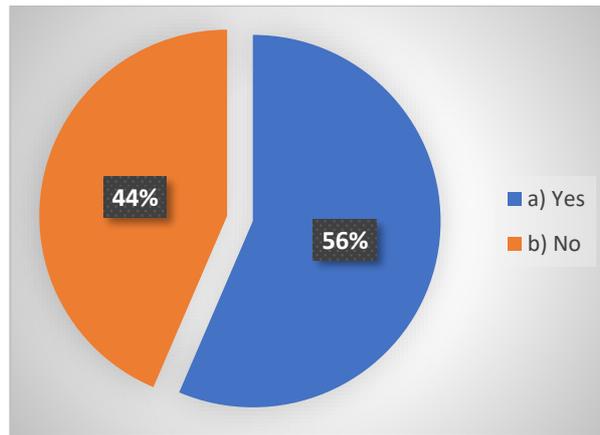


Figure 4.2.19: Are you aware some riders take passengers and rob them on their way?

Source: Field Survey 2019

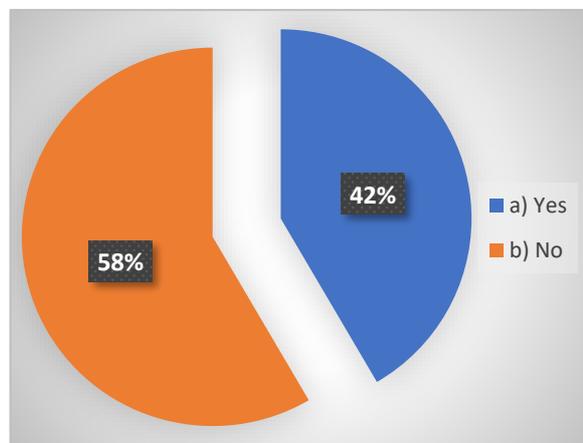


Figure 4.1.7: Do you know somebody who has ever been robbed by a rider?

Source: Field Survey 2019

Upon trying to find answers to the actions of the passengers, they were asked to give the motive(s) behind why they are not bothered with the robbery incidences that do occur using the services of these bikes. Fig 4.1.4 gives a myriad of reasons including the Low cost of their services representing 87 respondents which is the major reason, followed by Time constraint of 66 respondents which has got to do with trying to report to wherever the passenger is heading to on time and Road network accessibility having 54 respondents which indicates that there are not many by-passes or link roads for vehicular and traffic diversions. These and many others are reasons why people are not bothered to patronize the services of these bikes, even in such risky environments.

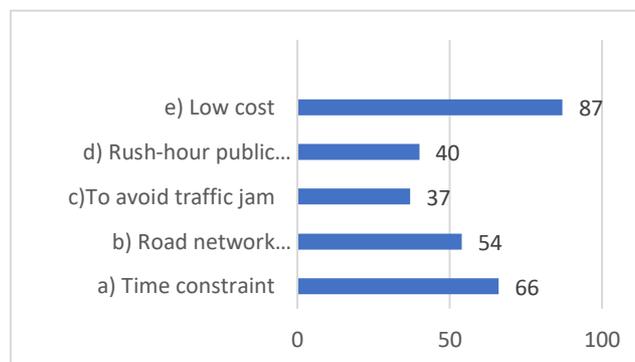


Figure 4.1.4: Why do you usually take Motor Bike/Tricycle? (Can choose more than one)

Source: Field Survey 2019

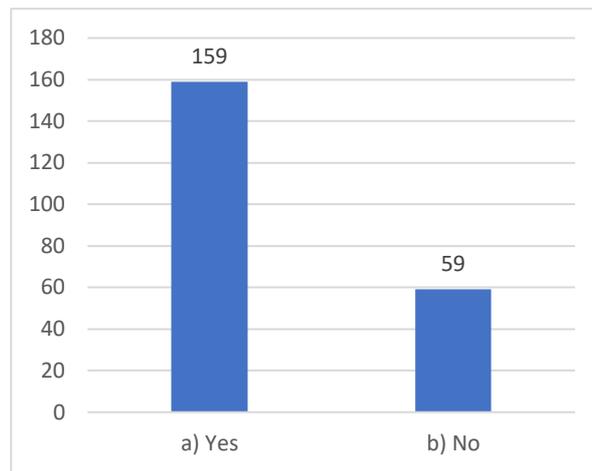


Figure 4.2.9: Have you been having problems with the Police?  
 Source: Field Survey 2019

It is recalled in Fig 4.2.11 that rider respondents mentioned of Police harassments as second highest reason why they usually do not observe traffic regulations. It is at the backdrop of this that the study seeks to know the kind of harassments meted out to them by the Police. Evidently, Fig 4.2.9 shows that about 74% of the riders are said to have had one form of a problem or other with the Police in performing their services.

Specifically, Fig 4.2.10 shows the problems these riders have had with the Police. These problems are Extortions, Prosecution and Arrest. Indeed, over 65% (142 Respondents) of these riders claim they have ever been arrested by the Police as portrayed in Fig 4.2.12.

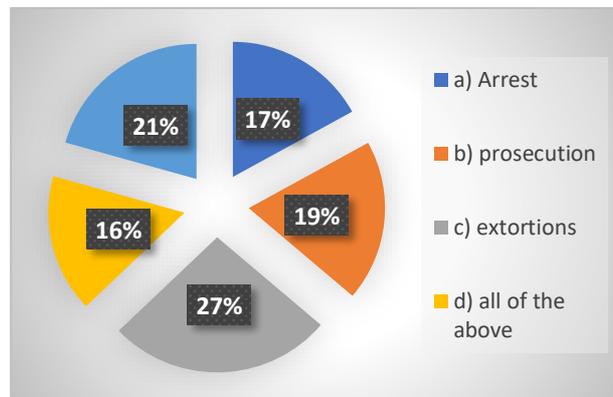


Figure 4.2.10: What are some of the problems you have with the police?  
 Source: Field Survey 2019

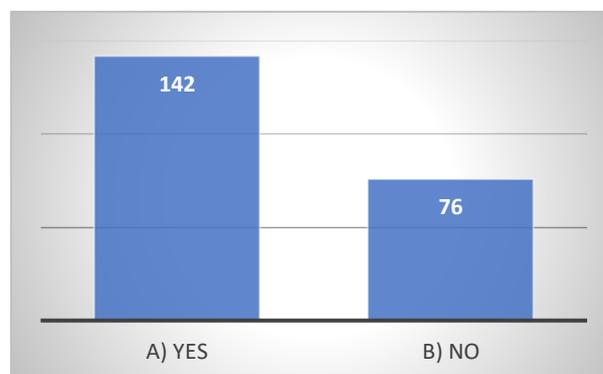


Figure 4.2.12: Have you ever been arrested by the Police because of using the Bike/Tricycle as commercial?  
 Source: Field Survey 2019

For the study to understand the predicaments of these riders in the hands of the Police that push the riders to endanger their lives and that of their passengers by not observing road traffic regulations leading to many horrific road accidents, it was proper to know how the riders are able to “sort” themselves out with the Police. It is recalled that many of these riders have said they do not possess riding license and commercial insurance cover. Fig 4.2.14 clearly shows that extortion is the order of the day as almost 60% of all arrest pay monies to the Police without receipts which is amplified in Fig 4.2.10 that indicate 27% being the highest problem the riders have with the police.

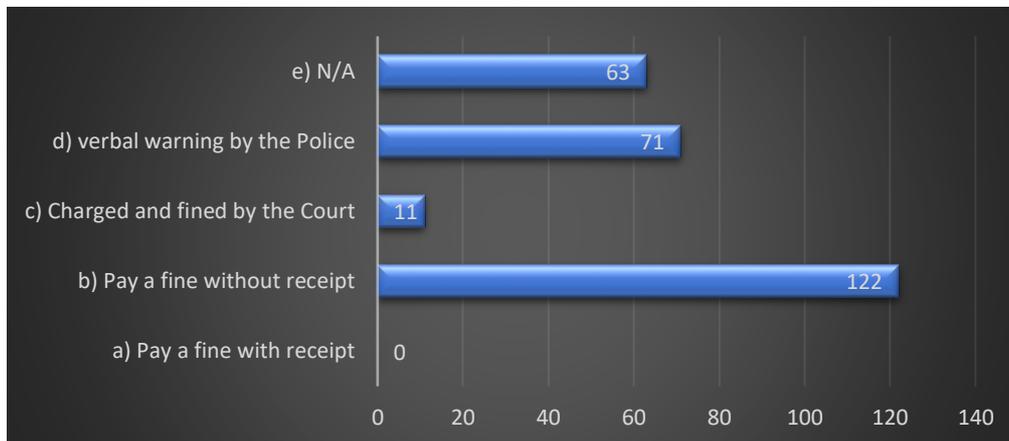


Figure 4.2.14: In all the arrest, how have you been sorting yourself with the Police? You can choose more than one

Source: Field Survey 2019

Indeed, the revelations so far indicate how risky and frustrating it is to operate the business or serving as a rider of illegal commercial okada/keke/pragia in Ghana. As a result, the study finds it important to know what has been the motivating factor. Essentially, financial motivation is said to be paramount in such a trade and that seeking to know how much they do/earn as sales per day, it is revealed in Fig 4.2.24 that they make between GH¢50 to over GH¢200. Indeed, 83.5% make GH¢50 per day as sales to the owner after taking away fuel and the rider’s daily housekeeping monies (chop money). Agreeably, these bikes are able to fetch their owners as much as approximately GH¢1,400 per month which is a good return for a bike and worth the risk and need attention in the accounting for economic activities in the country.

According to Fig 4.2.25, some riders are paid Daily, some Weekly and others Monthly. However, 60% of these riders are paid weekly and 29% are paid Daily which shows some form of job insecurity probably due to its illegal nature.

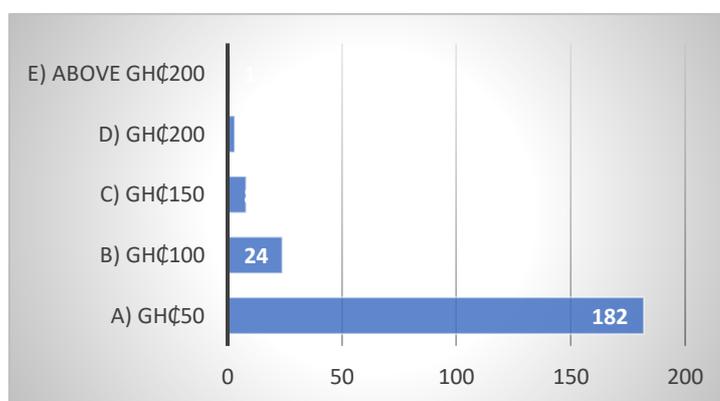


Figure 4.2.24: How much do you make as ‘Sales’ a day?

Source: Field Survey 2019

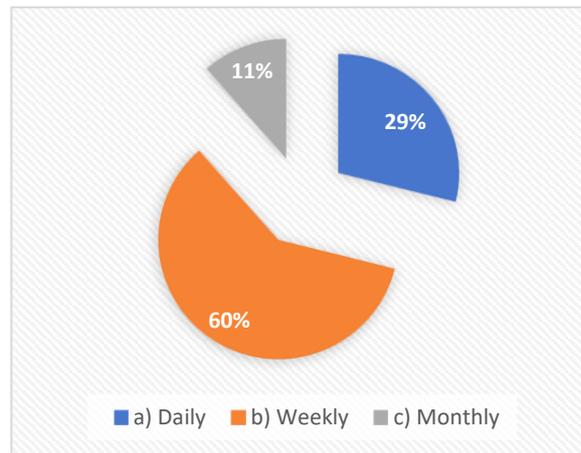


Figure 4.2.25: How have you been paid as a rider?  
 Source: Field Survey 2019

Although, these riders are paid in different time frames, their monthly estimates based on when they are paid is enumerated in Fig 4.2.26. Approximately, they are paid between GH¢150 to over GH¢300 per month. In fact, 53% of the riders are paid between GH¢250 and GH¢300 as a monthly take home without considering any form of security and subsequent benefit.

Unsurprisingly, 96% of these riders and owners believe that the okada/keke/pragia business is a good employment opportunity for them as depicted in Fig 4.2.30.

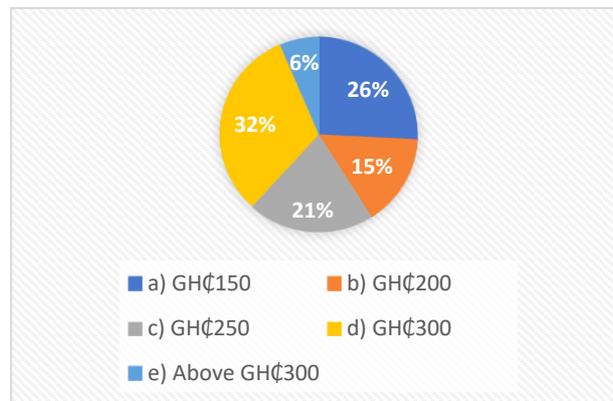


Figure 4.2.26: Approximately how much are you paid for a month?  
 Source: Field Survey 2019

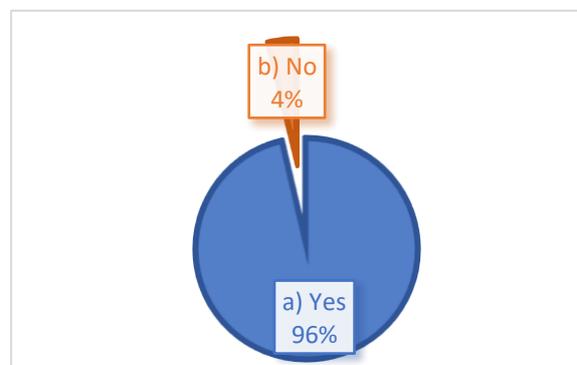


Figure 4.2.30: Do you think this is a good employment avenue for you?  
 Source: Field Survey 2019

After identifying some or many of the problems confronting the riders/owners and the general public of the okada/keke/pragia business and the knowledge of an existing law L.I. 2180 (2012), which bans these bikes from commercial uses, it becomes imperative to quiz these groups whether, in spite of all the problems identified and the risks thereof, that business should be given the green light by the legislature. In Fig 4.1.11, about 81% of the general public respondents consisting of experts and passengers posit that government should make a U-Turn and legalize the use of Motor Bikes/Tricycle as commercial transport model. Their endorsement is echoed by the riders/owners in Fig 4.2.20 as all of them, a 100%, of that category of respondents insist the legalization for commercial purpose is the way to go.

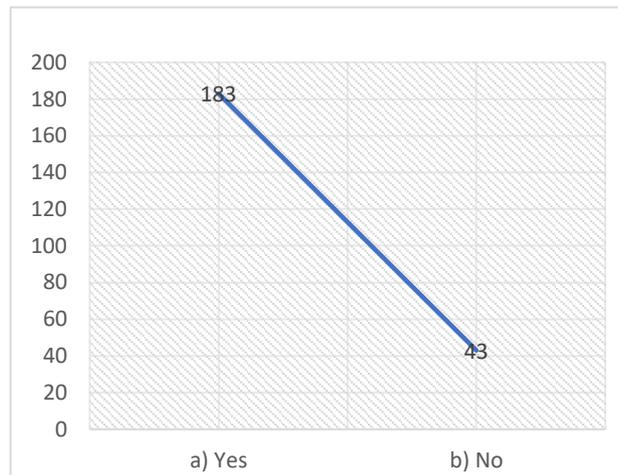


Figure 4.1.11: Do you think government should legalize the use of Motor Bikes/Tricycles for commercial purpose?

Source: Field Survey 2019

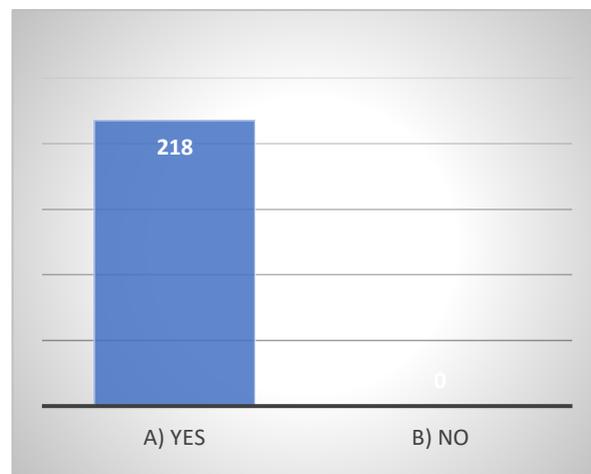


Figure 4.2.20: Do you think government should legalize the use of Motor Bikes/Tricycles for commercial purpose?

Source: Field Survey 2019

Having established their stand, it was proper to seek their understanding if the legalization will have any impact or influence on the general menace caused by these bikes. Responses in Fig 4.1.12 and Fig 4.2.21 show that legal backing will reduce the menace as about 80% of general public and 89% of these bike riders/owners affirm to the notion.

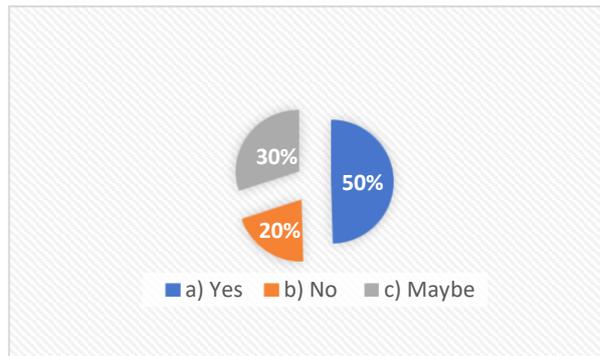


Figure 4.1.12: Will a legal backing reduce motor bikes/tricycles menace in general?  
 Source: Field Survey 2019

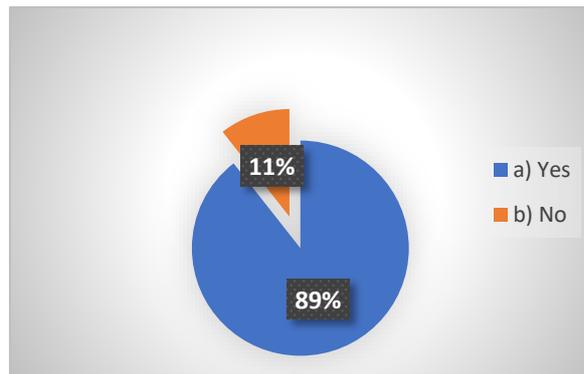


Figure 4.2.21: Will a legal backing reduce motor bikes/tricycles menace in general?  
 Source: Field Survey 2019

Having established the fact that legal backing will help mitigate general menace of the bikes’ operations, the study seeks to know how that can reduce the menace. It is revealed in Fig 4.1.13 that, because of the legalization they will be regulated and so will see the need to observe road traffic regulations, culprits will easily be identified because of measures that would be put in place and the fear of sighting the police leading to disregarding traffic regulations will cease or minimize. Indeed, the responses in Fig 4.2.22 are not different from the responses from the general public. The riders/owners also argue that legal backing will help them observe road traffic regulations because the police fear factor which is amongst their banes of rushing leading to many reported accidents shall cease. They again opined that culprits will easily be identified due to measures that might be put in place.

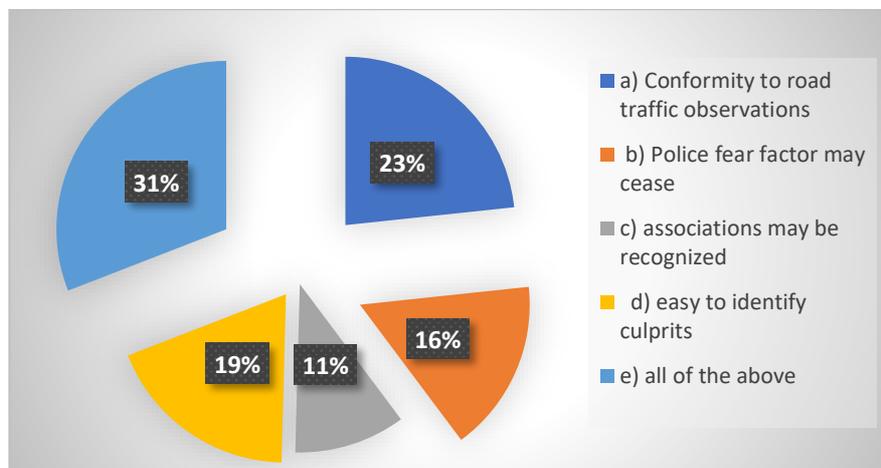


Figure 4.1.13: How will a legal backing for commercial use reduce motor bikes/tricycles menace?  
 Source: Field Survey 2019

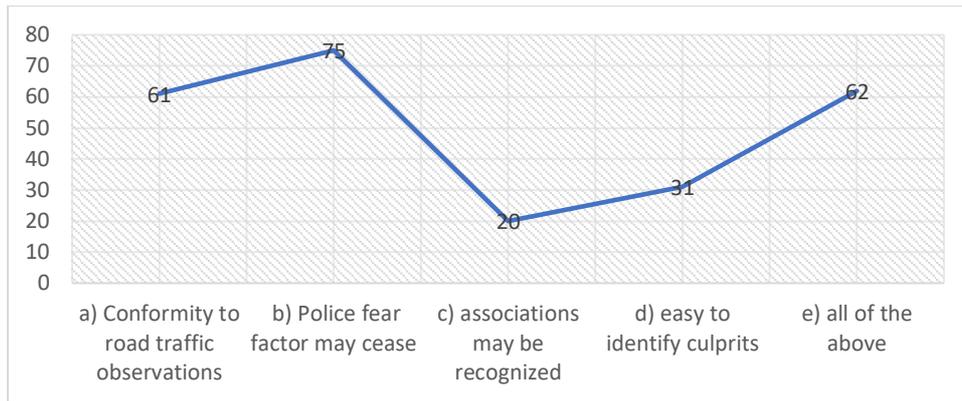


Figure 4.2.22: How will a legal backing for commercial use reduce motor bikes/tricycles menace? You can choose more than one  
 Source: Field Survey 2019

To further deal with the menace, the study sought from the respondents what other things can be done to eliminate the vices associated with the bikes/tricycles when legalized for commercial purpose. Majority of the general public respondents in Fig 4.1.14 insist on formation of associations as a checker and identifying the bikes/tricycles with embossment identification numbers from MMDAs for easy identification from even afar which is also confirmed in Fig 4.2.23.

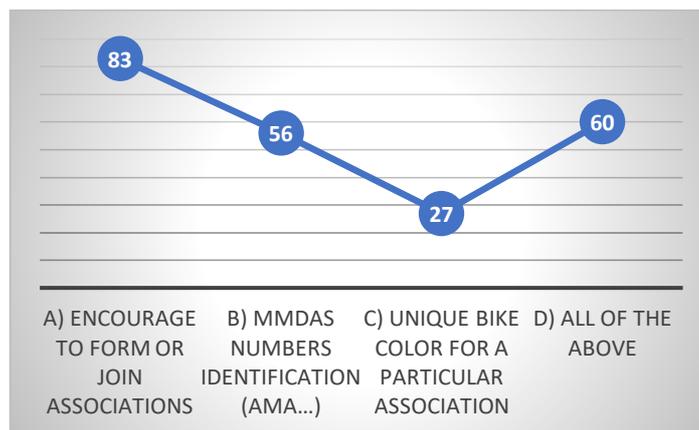


Figure 4.1.14: What will be your suggestion to reduce if not eliminate the menace of motor bikes/tricycles if accepted for commercialization?  
 Source: Field Survey 2019

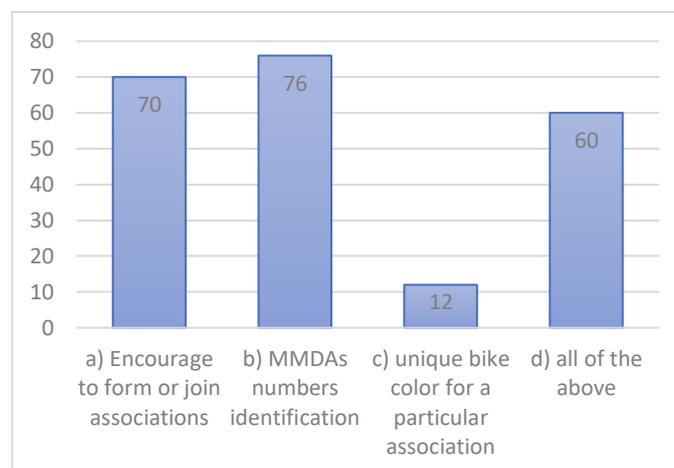


Figure 4.2.23: What will be your suggestion to reduce if not eliminate the menace of motor bikes/tricycles if accepted for commercialization?  
 Source: Field Survey 2019

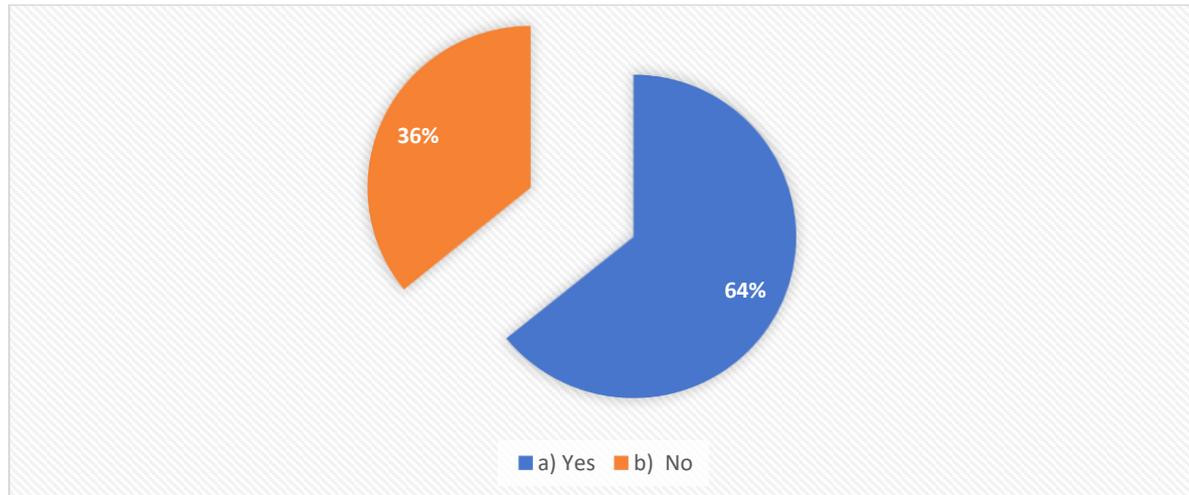


Figure 4.1.16: Do you think the architecture of our roads contribute to the numerous Motor Bikes accidents?

Source: Field Survey 2019

Again, one of the issues majority raised concerns the road architecture of the country. In Fig 4.1.16, 64% are of the opinion that the Ghanaian roads are not friendly to other road users apart from the traditional vehicles. Indeed, it is unacceptable to see these vehicles mingling with motor bikes/tricycles and bicycles on the roads which should have dedicated lanes to avert the many knocks and crashes.

## 5. Conclusion and recommendations

In tandem with the aim of the research, the study clearly reveals that many of the riders do not possess riding licenses as is posited by Ipingbemi and Adebayo (2016) in the literature which is contributing to many road accidents as a result of unprofessional riding conduct. According to the study, another area that contributes to the accidents is police harassments and extortions which are in conformity with SSATP (2014), a situation the riders try to avert and hence jump traffic lights leading to many crashes. Again, the riders have revealed that some passengers push them not to conform to motor traffic regulations, especially not observing traffic light warnings in peak periods to meet their working times as revealed in this study.

The other risk associated with the operations and or services is non-conformity to the provision and use of crash helmet, especially for passengers of the motor bikes called okada leading to many fatalities as revealed in the study. Expectedly, the study revealed that, about 80% of the bikes do not have insurance, especially, commercial insurance.

A shocking revelation of the study was that of the knowledge by other riders of reported passenger robbery incidents involving okada riders who pick them. Indeed, this is a shocking revelation because until now, the public discourse on this has been a perception.

Agreeably, the study revealed that, there have been several accidents involving and or caused by these motor bikes and tricycles. One other area the public raised alarm is the architecture of Ghana's road network. In fact, elsewhere, bicycles, motor bikes and tricycles have a reserved lane as part of the road architecture to avoid these bikes mingling with motor cars and vehicles, and to a large extent reduce the numerous crashes.

Again, upon all these risks associated to using the services of these bikes, the citizens of Ghana said, during the study, that they will continue to patronize the services of these bikes. In Fig 4.1.11, Fig 4.1.12, Fig 4.2.20 and Fig 4.2.21, over 80% of the respondents in both study groups have indicated that the bikes must be legalized for commercial use.

One other finding of the study is that, the bikes business is a good source of employment for the riders and their owners as 96% opined that they make between GHC150 to GHC300 per month and GHC1,200 per month respectively. Thus, it can be said to be a good source of income, according to these operators.

With respect to these findings and conclusions, it is recommended that, the okada/pragia/keke/motor king/motor kya operations should be legalized for commercial use as indicated in Fig 4.1.11 and Fig 4.2.20 where about 81% of the general public and 100% of the operators have indicated so.

Again, in trying to legalize the commercialization of these bikes' operations, authorities are advised to put up some regulatory measures for strict compliance by the operators. Areas that are to be looked at in the quest to minimize many of the risks associated to their operations should be the formation of identified Associations and an MMDAS identification marks as depicted in Fig 4.1.14 and Fig 4.2.23 respectively.

Finally, enforcement of the usage of crash helmets, acquisition of riding licenses, procuring of commercial insurance for the bikes and in the medium to long-term redesigning the roads to dedicate a lane for the bikes, should be non-negotiable. The study has shown that legalizing these bikes for commercial purposes has inevitable stance but should be under strict regulations.

## References

- Adams, R. H. (2004). "Economic growth, inequality and poverty: estimating the growth elasticity of poverty," *Journal of World Development*, vol. 32, No.12, pp. 1989-2014.
- Aderamo, A.J., (2012). Urban Transportation problems and challenges in Nigeria: A Planner's View' *Prime Research on Education Vol 2 (3) 198-203*.
- Adesanya, A. (1998). The use of Motorcycles for Public Transportation in Nigeria: The situation in Ibadan African Public Transport Association (2010). Report on Statistical Indicators of Public Transport Performance in Africa. Version 1.3 Final Version
- Agyemang, K.K. and Panford, M. K. (2006). African's Development in the Twenty-first Century: Pertinent Socioeconomic Growth. Published Mphil Thesis (Monograph), Department of Geography, Norwegian University of Science and Technology, Trondheim.
- Ayodele A. (2009): Safety of Tricycle users on roads. [www.compassnewspaper.com/NG/index.php](http://www.compassnewspaper.com/NG/index.php). 14<sup>th</sup> March, 2019.
- Bamidele, O. (2016). The Political Economy of Tricycle Transportation Business in Osogbo Metropolis: Lessons for a Developing Economy
- Banister, D., and Berechman, Y. (2000). The economic development effects of transport investments.
- Banthia, P., Koirala, B., Rauniyar, A., Chaudhary, D., Kharel, T., and Khadka, S.B. (2006). An epidemiological study of road traffic accident cases attending emergency department of teaching hospital. *J Nepal Med Assoc*;
- Bardi, E., Coyle, J., & Novack, R., (2006). Management of Transportation. Thomson South-Western. ISBN 0-324-31443-4
- Barnes, E. (2005). Passengers as Drivers of Innovation in Public Transport Planning. Conceptual issues and experiences. SIET.
- Blakely, E. J., (1994). Planning local economic development, 2d ed. Thousand Oaks, Calif.: Sage
- Bonsu, D. (2015). Road Transport and Agriculture: A Comparative Study of The Implications of Road Access For Subsistence Agriculture In The Northern Ghana. Department of Geography. University of Bergen
- Čapkova, S. (2005). Local Government and Economic Development. In Local Government and Public Service Reform Initiative. Budapest and the Department of International Development Publication.
- Cervero, R. (2000). Informal Transport in the Developing World. Nairobi: United Nations Centre for Human Settlements (UN Habitat).
- Clarke, M. (2003). Is Economic Growth Desirable? A Welfare Economic Analysis of The Thai Experience. Centre for Strategic Economic Studies. Victoria University
- Declan, D, N. (2012). An Empirical Study of the Use of Tricycle as A Public Transport Mode in Nigerian Cities. *Journal of Social Sciences and Public Affairs Volume 2, Number 2, 2012* © Insuderc Academic Publishers
- Delta Regional Report, (2008). Multimodal Transportation. Assets, Needs, and Recommendations Report. DRA..
- Dinye, R. D. and Ahmed, A., (2015). The Significance and Issues of Motorcycle Transport in the Urban Areas in Northern Ghana. *Scientific Journal Review*, 2 (10)

- Dinye, R.D. (2013), "Significance and issues of motorcycle transport in the urban areas in northern Ghana, Scientific Journal and Review, Vol. 2(10), pp. 256-272
- Eddington, R., (2006). The Eddington Transport Study Main Report: Transport's role in sustaining the UK's Productivity and Competitiveness. UK Department for Transport, London
- Ghana News Agency, (2017). Transportation in Upper West Region
- Ghana Road Fund Act 536, (1997)
- Greene S. (2011). Free on Three: The Wild World of Human Powered Recumbent Tadpole Tricycles Universe, Indiana
- Guillen, M.D.V. and Ishida, H., (2003) Motorcycle-Propelled Public Transport and Local Policy Development—The Case of "Tricycles" and "Habal-habal" in Davao City Philippines
- Hanson, S. and Giuliano, G., (2004). The Geography of Urban Transportation
- Healey, M. J. and Ilbery, B. W., (1990). Economic Activity and Land Use: The Changing Information Base for Local and Regional Studies. Harlow, Longman
- Helmsing, A. J. H. (2001). Partnerships, Meso-institutions and Learning: New Local and Regional Economic Development Initiatives in Latin America, The Hague: Institute of Social Studies.
- Hill, T.R. and Nel, E.T., (2004) Thoughts of Rural Development Researchers in South Africa.
- Ipingbemi, O. and Adebayo, A., (2016). Tricycle as a Mode of Public Transportation in Ibadan Metropolis, Nigeria
- Jolley, A., (2002). New Technologies, Industry Development and Emissions Trends in Key Sectors: The Transportation Sector, mimeo, CSES, Victoria University, Melbourne
- Keskinen, A., (2007). Mapping Road Infrastructure in Developing Countries: Applying Remote Sensing and GIS – The Case of the Taita Hills, Kenya
- Lau, L., (1996). The Sources of Long-term Economic Growth: Observations from the Experiences of Developed and Developing Countries in Landau, R., Taylor T. and Wright G. (eds)), The Mosaic of Economic Growth, Stanford University Press
- Levy, P. and Wong, W., (2010). Ghana's Transportation System. Published by Benchmark Books
- McKnight, A. J. and Peck, R. C., (2003). Graduated Driver Licensing and Safer Driving, Journal of Safety Research, v34 n1
- Microfinance and Small Loans Center (MASLOC) Report, (2017). Shaping the Transport Sector. Wa Municipal Assembly, Upper West Region, Ghana
- Ministry of Transport Annual Report, (2017)
- National Research Council (NRC), (2002). Key Transportation Indicators: Summary of a Workshop. Committee on National Statistics. Janet Norwood and Jamie Casey, Editors. Division of Behavioral and Social Sciences and Education, Washington DC: National Academy Press.
- New Zealand Perspective (NZP), (2014). The Contribution of Transport to Economic Development: International Literature Review with New Zealand Perspective
- Njoh, A. J., (2007). "Transportation Infrastructure and Economic Development in Sub-Saharan Africa." Public Works Management and Policy, 4 (4)
- Obateru, M. O. I., (2005) Planning regional and rural development. Penthouse Publication, Nigeria
- Oduro, S. D. (2012). Brake failure and its effect on road traffic accident in Kumasi Metropolis, Ghana. International Journal of Science and Technology, 1 (9) 448-454
- Quellin, A. (2011). The Little Book of Trikes. Veloce Publishing Ltd., Dorchester, The UK
- Reinders, A., (2016). Tricycle Transportation in Kenya
- Rodrigue, D. J.-P., & Notteboom, D. T. (2017). *The Economic Importance of Transportation*. Retrieved on 05/01/21 from [3.1 – Transportation and Economic Development | The Geography of Transport Systems \(transportgeography.org\)](https://www.transportgeography.org/)
- Rodrigue, J. P., (2017). Urban Transportation Challenges, New York; Routledge, 440
- Schmitz, H (1995). Collective Efficiency: Growth Path for Small Scale Industry. Journal of Development Studies. Vol. 31(4):11
- Section 128 (1) of the Road Traffic Regulations, L.I. 2180, (2012). The licensing authority shall not register a motorcycle to carry a fare-paying passenger."
- Small, K.A. and Verhoef, T. E. (2007) The Economics of Urban Transportation. Routledge, London
- SSATP, (2014). Overload Trucks are Bad for Businesses and a Road Safety Hazard – Transport Industry Advocates for Self-Regulation. SSATP Newsletter
- Yeboah, S., (2015). Influence of Condition of Road Transport Infrastructure on Rural Agricultural Development in the Jaman South District, Bono Region, Ghana
- Zuure, D.N. and Yiboe, A. (2017), "The phenomenon of commercial motorbike transportation and its impact on the youth of Agbozume traditional area in the Ketu south municipality in the Volta region of Ghana," International Journal of Development and Sustainability, Vol. 6 No. 11, pp. 1689-1700.