KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY, KUMASI, GHANA

Motorcycle Taxis in the Provision of Rural Public Transport Services; A Case Study of Selected Towns in the Volta Region of Ghana

by

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DECLARATION

I hereby declare that this submission is my own work towards the MSc. and that to the best of my knowledge, it contains no material previously published by another person nor material which has been accepted for the award of any other degree of the university, except where due acknowledgement has been made in the text.

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ABSTRACT

Rural transportation problems and mobility challenges have led to increasing patronage of motorcycle taxi services by rural residents. This research investigated the increasing use of motorcycle taxis in some rural communities in the Volta Region and made appropriate recommendations to impact policy formulation. Questionnaires administered to three groups, namely; motorcycle taxi riders, motorcycle taxi users/non-users and taxi/trotro drivers in the towns of Sogakope, Dzodze, Akatsi, Adidome, Abor, and Mafi-Kumase, all in the Volta Region regarding motorcycle taxi transport. It was established that services provided by motorcycle taxis in these areas were for the conveyance of both passengers and goods. The latter, involved movement of goods to and from the markets and farms. Other services offered by the motorcycle taxis include the transportation of construction materials (e.g. cement, roofing sheets, and steel reinforcements rods), farming tools, coffin, and water. It was found that 85% of motorcycle taxi riders were below the age of 30 years, which is indicative of the fact that the services offered employment for the youth. Fifty-eight percent of motorcycle taxi riders own their motorcycles while the rest either acquired them through some form of hiring/rental agreement. Of the riders, 94% possessed no formal riding license. Daily users constitute 43.7% of all users and mostly use the services for short trips that last under 30 minutes. Sixty-one percent of motorcycle taxi users found the services provided to be satisfactory whiles 23% found it to be unsatisfactory. Generally, patrons indicated the need to address the problem of reckless riding. An overwhelming majority of respondents were aware of the illegality of the motorcycle taxi services. However, there were mixed reactions as to whether the operations should be legalized or not. Motorcycles taxi riders expressed full support for the legalization and training to enhance safety of operations. Most trotro drivers (over 80%) also supported the regularization of the services with appropriate enforcement and regulations, as in their view, the motorcycle taxis have come to stay and offer useful transportation services to rural communities that are difficult to serve by trotros and taxis because of the poor nature of the roads and low demand.

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CHAPTER 1:

INTRODUCTION

1.1 Problem Statement

The low population of rural areas coupled with large distances between adjoining settlements and townships as well as the poor nature of roads make provision of public transportation not economically viable (Howe and Davis, 2002; Riverson and Carapetis, 1991; Starkey et al, 2002). In a country such as Ghana where the provision of public transportation has mostly been left to the private sector, rural folks are faced with a big challenge in their daily movements from one place to another. This has led to the increasing use of motorcycle taxis to move people and goods.

Most research on motorcycle taxis have concentrated on their effects in the urban areas with little regard to its impact in rural areas. The activities of motorcycle taxis in urban areas especially Accra are constantly under scrutiny by the Ghana Police Service whilst activities in the rural areas seem to be acceptable and hence free of Police scrutiny.

The Ghana Road Traffic Act of 2004 (ACT 683) prohibits the use of motorcycles for commercial passenger transportation. This Act does not distinguish between motorcycle taxi operations in urban centres and rural areas. In major urban centres such as Accra and Tema, the users of motorcycle taxis range from frustrated passengers trying to beat time during rush hour congestion to peri urban dwellers who need to travel close to road network mainlines where they may access other transport options. Also motorcycle taxis come in handy for accessing areas where other public transport modes cannot access.

In urban areas, their operations are reportedly becoming a nuisance due to recklessness, lack of lane discipline, unsafe manoeuvres and high incidence of crashes. The same cannot be said of rural areas because of the low volumes of traffic, absence of congestion on the networks, lack of alternative modes of public transport among others. It may seem that the reasons for patronage of motorcycle taxi services in the rural setting may be different from those of the urban situation because of the reasons above, so policy formulation may need to consider their peculiar contexts and concerns.

So far, research to understand the operations and characteristics of motorcycle taxis have mostly been skewed towards their activities in urban areas to the exclusion of the peculiar situation prevailing in rural areas. Very little is known about the characteristics, the factors underlying the rise in the use of motorcycle taxis in rural areas, the reasons for their patronage and the services provided. It is in this vein that this research sought to contribute to bridge that gap in respect of the use of motorcycle taxis in the provision of rural transportation services.

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1.2 Study Objectives

The main aim of this research was to investigate the operations of motorcycle taxi services as a mode of public transport in the context of public transportation services in rural areas in Ghana. The specific objectives were:

a) To investigate the underlying factors leading to the growth of motorcycle taxis in Ghana
b) To determine the characteristics and types of public transportation services offered by motorcycle taxis in the rural environment
c) To establish the perception of the rural public about motorcycle-based public transport services

1.3 Scope of Research

The research focused on the operation of motorcycle taxis in six rural town centres namely Sogakope, Dzodze, Adidome, Akatsi, Abor and Mafi-Kumase all within the Volta Region. It would have been ideal to expand the scope to include all rural town centres in Ghana but due to financial limitation the Volta Region was used as a case study. Thus the study locations were selected with the hope that the characteristics of the motorcycle taxi services within those areas would be, to a large extent, be a representation of rural areas in Ghana.

The research included a field survey which consisted of administration of questionnaires to operators, users and non-users of rural motorcycle taxi services. Other aspects of the research included consultation with other stakeholders. Issues discussed bordered on the public perception and concerns about the service, legal implications and the way forward with regards to motorcycle taxi services. Figure 1.1 shows the position of the Volta Region on the map of Ghana.

Figure 1.1: Location of the Volta Region within Ghana

1.4 Justification

Even though motorcycle taxis are used as public transport in both urban and rural areas of Ghana, very little is known about their operations in the rural areas. An understanding of the role and nature of their operations and importance in the rural context will help targeting of different policies for urban and rural contexts. Also knowledge of the factors influencing rapid growth in the motorcycle businesses in rural areas will provide a basis for establishing their economic importance in the rural economy and the role they play in the daily lives of the people.

Since Transport underpins the economic and employment development strategies of many local communities and plays a key role in responding to the problem of social exclusion, the results of the study will provide information about the usage of motorcycles in the provision of taxi services in rural areas where large distances between services and population centres makes mobility a challenge for people without access to adequate transport.

The motorcycle taxi service is a relatively new phenomenon especially in the rural areas of Ghana, a closer look at the characteristics of the service will enable practitioners to manage them effectively.

Studies on the operations of these services are sparse and the few researches conducted seem to have been focused on their operations in urban settings, a study to establish their characteristics and definitive factors of growth in rural areas will reveal knowledge which otherwise was concealed.

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CHAPTER 2:

LITERATURE REVIEW

2.1 Introduction

Efficient transport is a very important component of global and national economic development. Transport availability can boost or be harmful to economic growth within individual nations as it has strong impact on global development patterns. The ability to transport goods and services as well as human resource is a requirement for economic growth and development and this makes a significant contribution role to the Gross Domestic Product of most countries (UN Commission on Sustainable Development, 2001). A good transport system is vital to the development of any country; this shows the important role that transportation plays in the development of every society, whether it is a developed, developing or under-developed nation.

Litman (2010) asserts that transport is that factor that enables economic activities by connecting people, businesses as well as resources, hence without transportation, there will be no economic development. According to Rodrigue et al (2013), when transport systems are efficient, economic and social opportunities benefits that result in positive multiplier effects such as better accessibility to markets, employment and additional investments are created. Similarly, when transport systems are deficient in regard to capacity or reliability, economic cost such as reduced or missed opportunities and lower quality of life are to be expected. Transport therefore, is the conduit that links all sectors of the economy, thus needs the necessary attention by society.

2.2 Transportation trends

The provision of transport infrastructure has grown extensively across the globe. Dinye (2013) describes the changes in transport modes which have mostly come about due to technological advancement. There are a large number of different transportation modes in use around the world today. Depending on the part of the world under consideration, some modes are more common than others but all modes have achieved varying successes in addressing the mobility needs of human communities (Kipke, 1991). Depending on the stage and needs of human societal

development, a particular transportation technology has been developed or adapted with an array of impacts and hence the different types of modes available today (Rodrigue et al, 2013). In most countries of the world, however, including developing countries, passenger cars and trucks have become the most important transport modes (GTZ SUTP, 2010).

Although road transport has its enormous benefits, it comes along with several problems, which have plagued most developing countries over the years. Societies over the years have developed their transport systems mostly around vehicles and are losing the values of most cities (Lowe, 1990). The externalities associated with the over reliance on road transport as a mode of transport are outweighing its benefits. In a similar vein, GTZ SUTP (2010) reported out that the growth of road traffic has overwhelmed the development of the city structures as well as the supply of sufficient infrastructure creating problems such as congestion and fatalities due to traffic accidents among others.

Road transport is a popular mode of transportation in most developing and developed countries but still needs a lot of innovation to reduce problems associated with it to minimal or environmentally acceptable levels. Although governments have directed much efforts and resource in this direction, it seems the complexity of the problem keeps deepening.

2.3 Transportation in Developing Countries

It is already established that transportation is key to the development of any nation (Litman, 2010; Masood et al, 2011). Despite large expenditure on the transportation sector, improvement in mobility seems to only get worse. Khisty (1993) estimates that over 15 to 25% of total annual expenditures of governments in developing countries are spent on improving transport infrastructure. The current problems have however not eased; on the contrary they seem to get worse and Masood et al (2011) attributes this trend especially in developing nations to bad planning, lack of governance, and high rates of corruption.

Transportation has a strong correlation with development. Unfortunately due to inadequate planning, most cities develop in a manner that creates an increase in distance between activity locations and residential locations. This consequentially has led to increase in personalised

automobile use and hence sharp increases in traffic congestion around the world (Abuhamoud et al, 2011). Transportation development in most developing countries has been tailored towards road transport hence most infrastructure development have focused on such. However, the most popular form of moving people (buses services) has been failing all over Africa and other developing countries. In developing countries, even with the increases in vehicle ownership, dependency on public transport is very high. However, the financial conditions and performance of all forms of government organized public transport have been ineffective and on the decline (Kumar, 2011). As the population of countries increases rapidly, public transport becomes vital for the vast majority without access to private transport.

Non-motorised forms of transport like the bicycle could have filled a bit of gap in developing countries but this has been neglected in most parts of Africa (Abuhamoud et al, 2011). This, coupled with the explosion in private vehicles for high income earners, has led to the high rates of traffic congestion and its attendant problems. Those who are unable to afford to purchase a vehicle have resorted to finding alternative means of transport and thus the growth of private owned informal transport, while others walk from one place to the other.

There is need for personal mobility particularly for access to economic and social opportunities, but the provision of this cannot rest on individuals alone (Iles, 2005). Unavailability of options has forced people and the market to develop creative solutions to address daily travel needs for personal mobility with individuals assisting in the provision of public transport (Dinye, 2013).

2.4 Transportation in Rural Areas

It is important to note the peculiar importance of transport in rural areas. Poor or inadequate access to transport constrains economic and social development and contributes to poverty. Starkey et al (2002) write that provision of better access to transport services stimulate economic activity and creates a virtuous circle that reduces poverty and improves the lives of poor rural residents. They further state that the factors affecting rural transport provision are different from those in urban areas. In provision of rural transport services there is the need to address the particular needs of the community concerned and also the fact that such areas are characterized by low demand making private participation unattractive.

The purpose of the travel may relate to the household (obtaining water, fuel, and food), agriculture (tending and marketing crops and livestock), or a wide variety of socio-economic activities (education, religion, recreation, health, employment, income generation). It is therefore very important to consider local needs in drawing up plans when it comes to rural transportation.

Rural areas in developing countries are often characterized by inadequate transport system, making it difficult for agricultural produce to be transported to market centres thereby hampering economic growths (UN Commission on Sustainable Development, 2001). Non-motorized transport seems to dominate transportation in these areas; and hence do not require any expensive provision. It is no surprise walking is the major transport mode for most rural dwellers. Poor accessibility in the rural areas of developing countries perpetuates the deprivation trap by denying communities access to their most basic needs (Ellis and Hine, 1998). Out of necessity, one mode that is receiving lots of attention is motorcycles taxis.

2.5 Motorcycles in Transport

Motorcycling is a smart and affordable way to travel, ideally suited to the developing world, where public transport has not been quite effective (AFCAI, 2013). Darido in 2010 found the use of motorcycles to be very common in developing countries because they are relatively cheap; usually less regulated (in terms of licensing, enforcement, and insurance). Motorcycles also have lower travel costs, produce less CO_2 emissions, reduce travel time (saving up to 48% of travel time) in traffic congestion in urban areas, and use valuable inner-city parking space more effectively (AFCAI, 2013).

In this vein, it is not surprising the wide increase in motorcycle ownership in most countries. In Taiwan for instances, number of motorcycles have increased 154 times from 92,000 to over 14 million in four decades (Chen et al, 2013). Darido (2010) also writes that motorcycles and threewheeled vehicles are the primary modes of transport on urban roads in many Asian cities. Estupiñan et al (2012) also state that motorcycles in Latin America as of 2002 stood at a staggering 7.8 million. They further elaborate that motorcycle fleet in Brazil increased 14 times between 1990 and 2008 and increased by 100% between 2005 and 2009 while in Sao Paulo motorcycle fleet increased three times between 1985 and 1997.

2.5.1 Motorcycle Taxis in Rural Transport

Motorcycle taxi is the term used to describe the process of providing commercial public transport services using the motorcycle. It is characterized by rider giving a passenger a ride on the backseat of the motorcycle and the passenger paying for the service after the trip. This is becoming a preferred means of transport in cities where there is high level of congestion as these motorcycles are able to weave in and out of the slow-moving or still-standing traffic. It is also popular in areas without adequate public transportation, because it serves as a cheaper means of mechanised transport.

Most African countries, seem to be synonymous with underdeveloped and poor road networks with only a few asphalt roads existing on the main routes between the centre and the periphery thus motorcycle taxis offer a travel solution in this regard (Lourdes et al, 2012). Starkey and Njenga (2010) points out that motorcycle taxis are increasing rapidly in many African countries for its flexibility in transport, but partly attributes the phenomenon to the availability of inexpensive Chinese motorcycles and reduced import duty. The International Road Federation (IRF, 2011) asserts that motorcycles taxis are increasingly being adopted in developing countries due to its ability to operate on poor roads, passing road blocks caused by mud, water or landslides.

Motorcycle taxis are a popular means of commercial transportation in some developing countries in Asia, South America, and Sub-Saharan. It is also popular in most African countries and depending on the location has been called a number of names. The name *Boda* is associated with it in Uganda and Kenya, *Zemidjan* in Benin and Togo, *kabou-kabou* in Niger, in Cameroon they are called *Motos-taxi or Bendskin*, *Clando* in Chad, *Okada* in Ghana and *Okada* or *Alalok* Nigeria (Abuhamoud et al, 2011; Lourdes et al, 2012). It is estimated that *Zemidjan* provides about 80% of all urban transport in Benin.

Rural transport in most parts of Africa is made possible by 'rural taxis' and intermediate means of transport, normally over poor roads. About 75-80 percent of the motorized trips in Douala (Cameroon) are by taxi and motorcycle taxis out of which 30 percent are made by motorcycle taxis, emphasizing its relevance in the African transport (Kumar, 2011)

Motorcycle taxis in these rural areas transport people and their goods, from poorly served villages to functional areas in cities and towns (IRF, 2011). Motorcycle taxis offer a quicker transport option

to destination than a minibus or group taxi, and can cut through traffic and provide direct door-to-door service (Chang, 2012). Chang (2012) further maintains these twowheelers are rid of the many multiple stops associated with mini buses and always take passengers to their absolute destinations. Starkey (2008) sees motorcycle taxi business in Africa as a booming one, highlighting its profitability as reason for private financing in Cameroon, Rwanda and Tanzania, a system that allows all to benefit–owners, operators and passengers. Apart from sealing the transport gap, motorcycle taxis have offered young men attractive livelihoods while stimulating employment in the supply and maintenance services (IRF, 2011). Motorcycle taxis, in some countries are used to address youth unemployment and mass poverty. For instance the attractiveness of the sector in Nigeria is highlighted by the earnings of operators being above the minimum wage (Ogunrinola, 2011; Tuffour and Appiagyei, 2014). In Lagos, the 200,000 commercial motorcycles available provide direct employment to over 500,000 people (Kumar, 2011).

To a very large extent, these two-wheelers have made significant contribution to the solution of the transport situation in most African countries. Ideally, motorcycles have traditionally been known for private use, thus did not require strict regulations (Tuffour and Appiagyei, 2014). In some situation, motorcycle taxis have just been ignored when there are transportation shortages, regarding them as just a temporary measure (Lourdes et al, 2012).

The hazards associated with motorcycle operations are diverse. Motorcycles have been associated with armed robberies in various countries. The lack of adequate regulation in many developing countries also makes riders ignore the risk associated with riding without helmets. This has culminated in the many casualties that are associated with their operations. Also there is lack of regulation on importation of motorcycles, hence most imports have been second hand motorcycles and the emissions from them have adverse effects on riders as well as passengers.

2.6 Road Transport in Ghana

2.6.1 Institutions Responsible for Road Transport

The Ministry of Transport, established in 2009, is the body responsible for road transportation in

Ghana. It coordinates the functions of existing ministries; Harbours and Railways, Road Transport Services, and Aviation (MoT, 2014). It aims at:

- creating an accessible, affordable, reliable and efficient transport system for road users as well as other modes of transport,
- ensuring sustainability in the transport sector; integrating land use, transport planning, development planning and service provision;
- promoting economic development and social development (MoT, 2014)

In order to achieve these goals, the Road Transport Services subsector has a number of departments and agencies responsible for specific aspects of road transport;

- Driver & Vehicle Licensing Authority (DVLA) established to oversee the driving standards in the country by ensuring that vehicles are roadworthy.
- National Road Safety Commission which is responsible for ensuring safety on the roads in Ghana through sustainable planning.
- Government Technical Training Centre which is a centre established to train young people in Ghana in Automotive Trades.

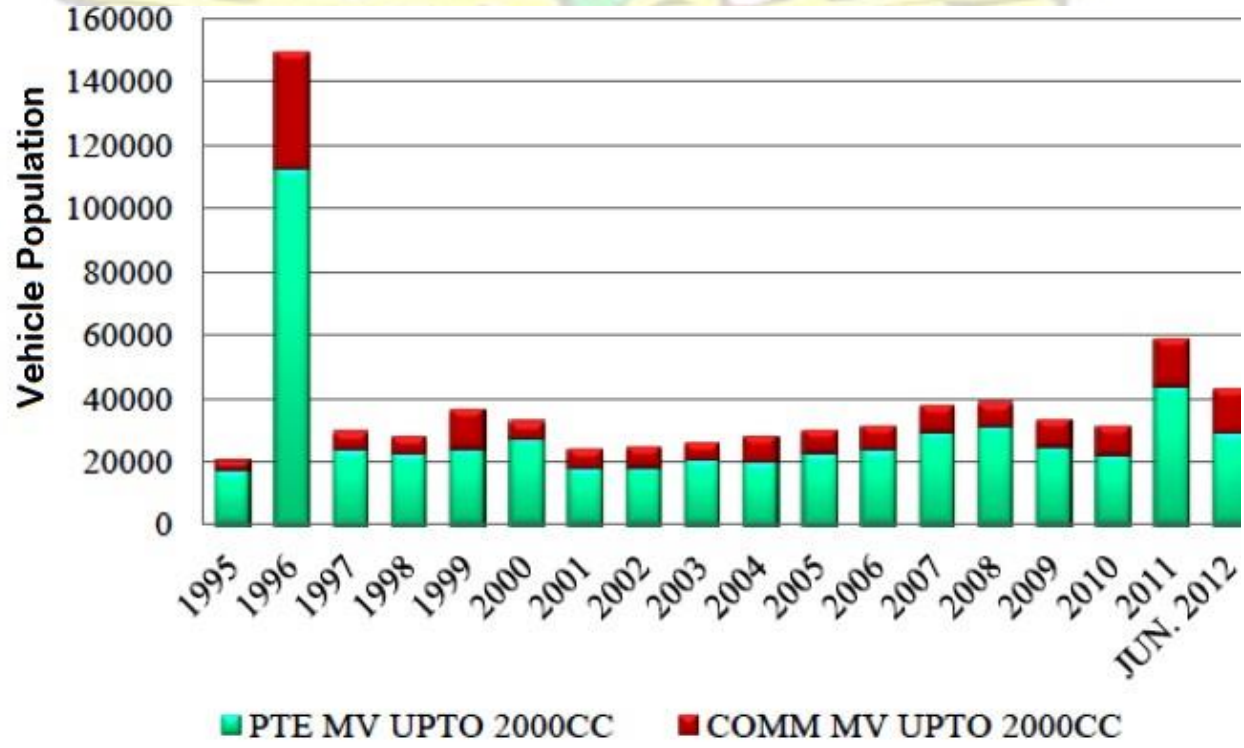
In regard to Public Transportation Regulation, Section 79 of the Local Government Act, 1993 (Act 462) confers on District Assemblies to regulate public transport provision within their area of jurisdiction. Out of this Act have come various by-laws at the Assembly level to aid in the regulation process. Also, the coming into effect of the Legislative Instrument (LI 1961) in 2010 which creates the various Departments of the Assembly also includes a Transport Department. This mandates all Assemblies to have a Transport Department which is another step to ensuring effective public transport regulation in the country. There is however the need for capacity to be built to aid in proper regulations being laid down to foster development.

2.6.2 Current Situation of Road Transport in Ghana

Ghana's Transport Sector is mostly characterised by the following modes: air, inland water, maritime, rail and road transport. Road transportation, however, is the main mode of transportation and is regarded as playing a major role in development activities of the country through the movement of goods and services from one place to another. The Government considers the availability of good roads as one of the main catalysts accelerating Ghana's economic growth and

attainment of the status of middle-income country by the year 2015 (NRSC, 2012). This shows government's commitment to providing good infrastructure for road transport. Over 80% of the Government's annual budget for the transport sector is channelled into road infrastructure investment (Tetteh-Addison, 2012) but the defect is still staggering.

Road transportation in Ghana is mostly provided by the private sector. This has led to a steady increase in vehicle population in the county. Ghana's vehicle/population ratio was 31 vehicles per 1000 population in 2003 but this increased to 44 vehicles per 1000 population in 2008 and it is steadily increasing. The total number of vehicles in the country as of March 2012 stood at approximately 1,425,900 (Tetteh-Addison, 2012). This increase in vehicle population is however not marched by the increase in commercial vehicle population. Even though there has been an increase in commercial vehicle population, the increase has been very marginal and hence the gross problems with public transportation. Figure 2.1 shows a comparison between the growth of private vehicles and commercial vehicles, which could be attributed to rapid increase in population and economic activities.



Source: (Tetteh-Addison, 2012)

Figure 2.1: Private motor vehicle registration versus commercial motor vehicle registration

2.6.3 Motorcycle taxis in Ghana

As already explained, the reasons for people using motorcycle taxi in Ghana differ depending on whether it is a rural situation or an urban one. There is also the situation where a specific need calls for the use of motorcycle taxis and it becomes a habit that is difficult to get rid of.

The emergence of motorcycle taxis in Ghana in 2001 was actually attributed to the need for services at Korleena area, a suburb of Accra due to a collapsed bridge on the Odaw River on Guggisberg Avenue. Motorcycle taxi services however continued after the bridge was repaired and more riders join in the fray (Tuffour and Appiagyei, 2014). In other areas in the Greater Accra Region such as Ashiaman and Tema, the phenomenon of motorcycle taxi emerged as a means of reducing travel in traffic congestion drenched areas.

The use of motorcycles is not a situation only prevalent in Accra. Actually the highest number of motorcycles in the country can be found in the northern sector but they are not used as taxis, but as a means of enhancing personal mobility. However, there are some parts of the north where motorcycle taxis exist, notable amongst them is Paga. Motorcycle taxis have recently become a dominant form of transportation in the Volta Region of Ghana, with the highest concentration believed to be in Sogakope and Akatsi.

The Ghana Road Traffic Act of 2004 (Act 683) precludes the use of motorcycles for commercial purposes or to carry fare-paying passengers in the country. Act 683 prescribes a fine or a term of imprisonment or both for persons who contravene. This Act was drawn aimed at improving and maintaining safety for all modes of road transportation in the country. Due to this, there is occasional Police task force engaged to clamp down on the activities of motorcycle taxis especially in the urban centres. This is mostly not the case in the rural areas where it is seen as bridging a much needed gap in transport provision. The operations of the motorcycle taxis have not yet become nationwide but there is the need to do research into these activities so as to adequately inform policy formulation.

CHAPTER 3:

METHODOLOGY

3.1 Introduction

This chapter outlines the various methods that were used to accumulate the necessary data needed for the study. A suitable sample size was selected to be used for the assessments. The use of questionnaires and interviews were employed. These were administered to both users and nonusers of the motorcycle taxi services. Answers from the respondents were assessed in relation to the aim of the project.

3.2 Study Considerations

3.2.1 Selection of study group

The study was intended to assess the nature of operations of motorcycle taxis in rural transportation. This was to aid in putting forward recommendations on policy formulation. To this end, the main stakeholders were people who either operate the motorcycles or patrons of their services. Three main study groups were therefore identified as listed in the Table 3.1. **Table 3.1: Study Groups Considered**

S/N	STUDY GROUPS	DESCRIPTION
1.	Motorcycle taxi riders referred to as Okada riders	The riders of the motorcycle itself. It excludes those who use their bikes for personal rounds
2.	Motorcycle taxi users and non-users	People identified as patronising services of the motorcycle taxis and others who do not
3.	Taxi and trotro drivers	The competition, this includes other commercial passenger service providers

3.2.2 Sample size

A random sampling approach was adopted to aid in reaching an unbiased conclusion as possible. This involved a visit to all known loading points or places where motorcycle taxi riders were known to congregate either to rest or for business. All riders who were present and willing to be interviewed were engaged. This was continued until either riders got pillions or were not willing to be interviewed.

As a quantitative research process, no cap was given on the number of respondents to be engaged at each loading point or at each town. This was aimed at getting a high rate of respondents as much possible. A total of 329 people took part in the study with their distribution as detailed in Table 3.2.

Table 3.2: Sample Size surveyed

	Motorcycle taxi riders	Taxi/Trotro drivers	Motorcycle taxi users/non-users
Female	0	0	22
Male	110	103	94
Total	**110**	**103**	**116**

3.3 Data Collection

3.3.1 Questionnaires Design

A paper based questionnaire system was adopted. They included multiple choice questions, here respondents were asked to tick one option from a list of four or five options. Also, included were multiple answer questions where respondents were to tick one or more answers, for example "what other services do you offer?" Finally there were a number of open-ended questions that required respondents stating their views on certain issues. The questions sought information about personal characteristics, type of services provided, number of hours of operations, trip purposes for riders, means of other employment etc.

Prior to the main survey, the questionnaire was pre-tested in order to determine the clarity and vagueness of the questions. During the process, some questions were removed whilst some were modified to make it clearer. Also due to the study area, it was noted that for much more accurate data, most of the respondents needed to be interviewed with the questionnaire, so the interviewer needed to speak and understand the Ewe language.

3.3.2 Administration of Questionnaires

Primary data were collected through the administration of questionnaires to motorcycle taxi operators, motorcycle taxi users and non-users and to taxi/trotro drivers who were considered as the competition to motorcycle taxi operations. Also, discussions were held with the leadership of the existing groups to get an understanding of their operations.

Five trained interviewers were deployed to the field to administer the questionnaires and collect other necessary data for the study. This was done for four (4) days starting from Friday 27th March, 2015 to Monday 30th March, 2015. It should be stated that no observations were conducted at night, because of limited resources available and also for safety reasons.

Questionnaires were administered at every known station or point where motorcycle taxis congregate. Also taxi and trotro drivers were interviewed at stations while awaiting their turn to load. Users and non-users of the motorcycle taxi services interviewed were those at the loading points and anybody walking around who were willing to participate in the exercise.

3.4 Data Analysis

Data analysis was carried out using Statistical Package for the Social Sciences (SPSS) and MS Excel. Data management was performed to correct errors in data coding and entry. SPSS allowed for a combination of descriptive and inferential statistics to be analysed from the survey data. Frequency distributions and cross tabulation outputs were summarized and organized into tables for visual interpretation.

3.5 Limitation to Survey

The main limitation to the survey was the inability to administer questionnaires in all towns in the Volta Region. This forced the study to concentrate on a limited number of towns mostly in the southern part of the region.

Another limitation was securing interview sessions with respondents. Most motorcycle taxi riders were initially unwilling to cooperate but after several minutes of explaining the details and purpose of the survey they decided to participate. Those who refused to participate apparently feared that the data was to aid the police in making arrests.

To ensure research ethics (Saunders et al, 2009), the consent of each interviewee was sought through the filling of a consent form (see Appendix 1) before interview commenced.

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CHAPTER 4:

RESULTS AND DISCUSSIONS

4.1 Profile of Respondents

The age group of the respondents interviewed were between 18 and over 60 years. Figure 4.1 is a chart showing the age distribution of the respondents. Out of the 329 respondents, 47% were within the age group of 21 to 30 years. Sixty two percent of the total motorcycle taxi riders interviewed were in this age group while 23% were below. In all, 85% of the surveyed riders were found below the age of 30 years which clearly indicates that provision of motorcycle taxi services is seen as a form of employment for the youth.

Modal age for the respondents was 21-30 years. This is closely followed by the 31-40years group with 27% and 36% for motorcycle taxi users/non users and taxi/trotro drives respectively. For ages above 40years, the results showed that very few (1%) or less were motorcycle taxi riders.

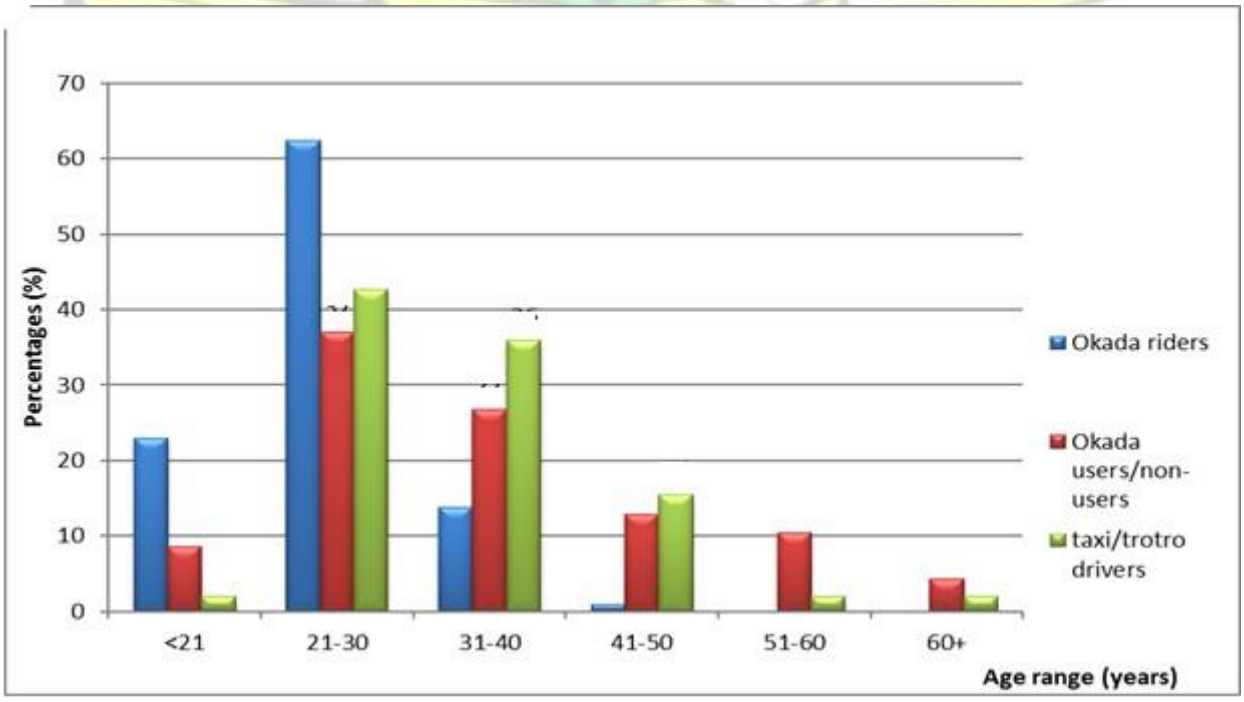

Figure 4.1: Age distribution of respondents

The distributions of the educational levels of the respondents are displayed in Figure 4.2. It is seen that majority of the respondents have received education up to at least senior high school (SHS)

level. Very few respondents did not have any formal education. This probably explains why the youth are turning to the provision of motorcycle taxi services as a source of livelihood.

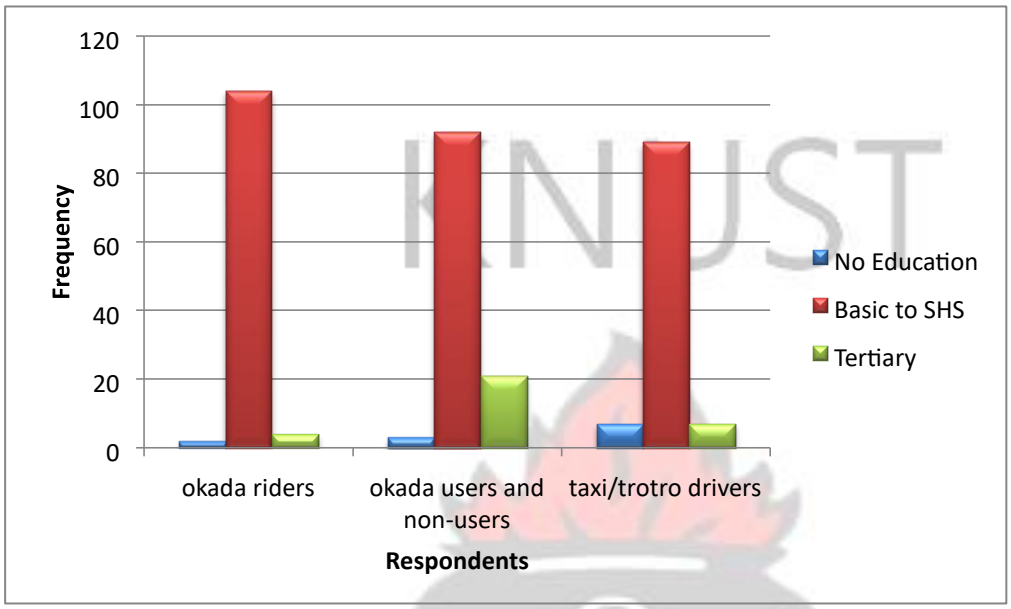

Figure 4.2: Educational qualification of respondents

Marital status of motorcycle taxi riders were also assessed in the survey to establish whether the riders have dependants which may be a motivation for venturing into the motorcycle taxi business. Majority of the motorcycles taxi riders (61%) surveyed were single whiles for the users/non-users and taxi/trotro drivers, the majority were married. This can be viewed from two perceptives; the first being that majority of riders are young and therefore unlikely to be married and the other being that motorcycle transport is generally seen as unsafe and therefore not attractive to people as they advance in age and shoulder more responsibilities. Figure 4.3 presents data on the marital status of the motorcycle taxi riders as well as the other categories of people surveyed.

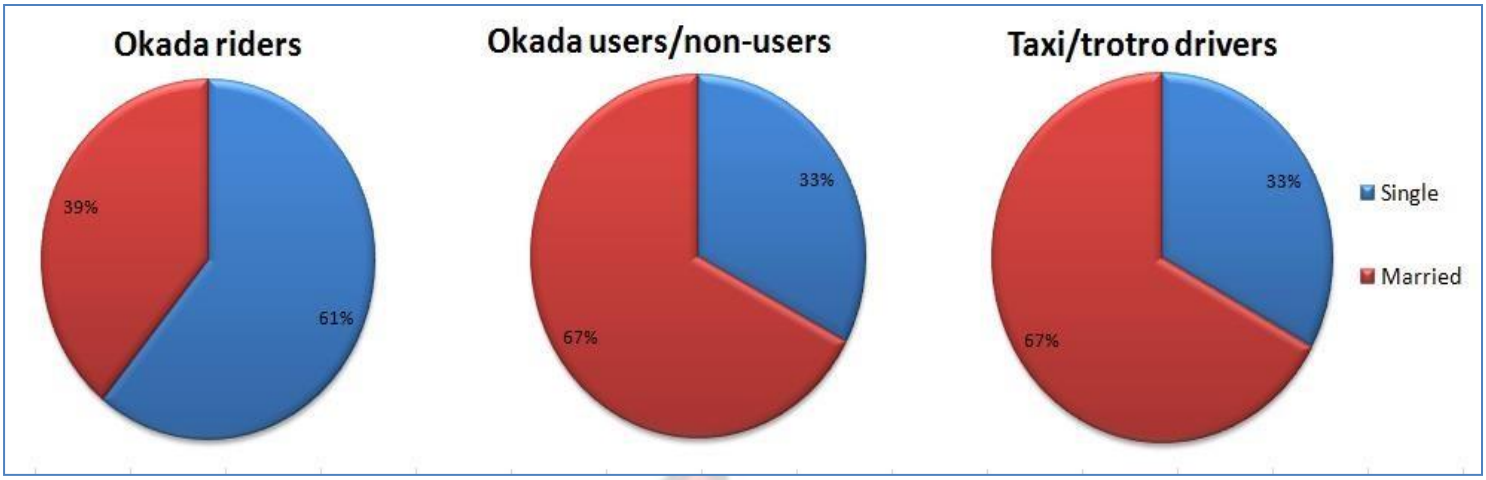

Figure 4.3: Marital status of respondents

4.2 Motorcycle taxi Operations and Characteristics

Motorcycle taxi operations varied greatly depending on the town being surveyed. While some towns had a loading point and a vibrant (motorcycle taxi) riders association, others had no such facilities or were dormant. Very organized groupings were found in Adidome and Mafi-Kumase, where the associations had secured loading points with sheds or waiting areas for passengers. Business was done from the loading points on a first come-first-served basis. Figure 4.4 shows a waiting and resting shed for passengers and riders at Mafi-Kumase.

Figure 4.4: Waiting shed for motorcycle taxis

Most towns had associations or unions that were not effective. Towns such as Akatsi and Dzodze had unions that were not very effective whilst Abor, Dabala and Sogakope had no such associations or unions at all. For locations or towns without loading points, the operations involve riders congregating at points where they are likely to have passengers such as near markets, churches, hospitals or any place where people gather. This results in pockets of riders at almost every corner within the town especially in the town centres.

4.2.1 Nature of bikes

In other parts of the world such as Asia, the use of three-wheelers for carrying passengers is very common. In the study area, however, only two-wheelers were recorded for passenger transport. Most motorcycles used for taxi services in the Volta Region are bikes imported from Asia. Notable brands spotted include Kawasaki, Yamaha, Hyosung, Suzuki, Haojue and Sanya with the most popular brand being the Sanya. Since these motorcycles are relatively cheaper than those from Europe and America, motorcycle taxis operators are able to purchase more of them to expand their operations.

Motorcycles of 111 horsepower and above constituted a staggering 94% of the total motorcycle sampled. Information gathered on the field indicated that the most popular motorcycle is the Sanya SY125-11. This model of the motorcycle has been described as featuring an "air cooled 4 stroke engine which offers low running costs and simple servicing" (Sanya 125-11, 2009). Having a majority of this type of motorcycle within the fleet gives an indication of the low emission rates associated with motorcycles being used in the catchment area, even though the choice of motorcycle may have been based on consumption more than environmental friendliness.

4.2.2 Ownership

Results of the field survey, results indicated that 58% of motorcycle taxi riders own their motorcycle. Most of the non-owners acquired their motorcycle through some form of rental agreement (ranging from GH¢4 to GH¢50/week) or from family/friends. Also, most of the motorcycle taxi riders who solely owned their motorcycle (96%) had one. The implication of this lies in the fact that most of these riders are their own employers, hence have the final say on the

income accrued from the bike. Similar outcome has been reported by Starkey (2008) who indicated that motorcycle transport services are booming in Africa due to the profitable nature of the business.

4.2.3 Rider qualification and license

A majority of the motorcycle taxi riders possess no form of formal training. Through family and friends, and self-tuition they learnt the skill to ride the bikes. Out of the total respondents, 70.4% indicated they learnt how to ride from family or friends whilst 28.7% learnt by self-tuition. Other responses on possession of a rider's license showed that almost all the riders (93.5%) did not possess a valid rider's license.

In terms of riding experience, the data showed that 51% of the riders have been in the business for less than 3 years whilst 33% and 16% have 3 to 6 years and more than 6 years' experience respectively (see Figure 4.6). This shows that there has been a rapid uptake on the profession within the last few years. This calls for a more pro-active response from government to address issues of motorcycle taxi transport and operations.

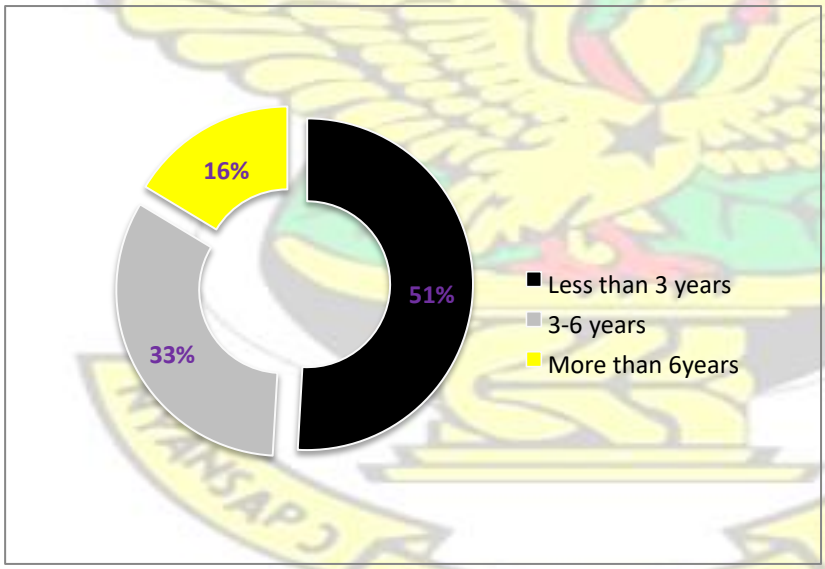

Figure 4.5: Riders experience

4.2.4 Working Hours

Regarding hours of work, results showed that 81.7% of the motorcycle taxi riders interviewed worked for 10-15 hours daily and the remaining (7.4%), for periods less than 5 hours per day (see

Figure 4.6). Furthermore, it was established that 51% of the surveyed motorcycle taxi riders were working on part-time basis whilst the rest worked full-time. It may appear that for majority of the riders there is a non-dependence on motorcycle taxi business for livelihood, however, the reality on the ground is that motorcycle transport services are used to generate supplemental income as most of the riders who are in the business on part-time are involved in other professions such as farming and trading.

For instance a farmer who is also a motorcycle taxi rider will averagely spend just four (4) hours on the farm on weekdays and 8 hours on a weekend with all the remaining time used for the motorcycle taxi services. Income from the motorcycle taxi services may well be a regular source of alternative income especially for the farmers and those into other professions.

This indicates the possibility of change in jobs and professions, by a mass of the youth in the area under study in the near future. Policy formulation regarding the use of motorcycle for taxi should therefore consider the benefits to the rural economy to avoid deprivation of livelihood.

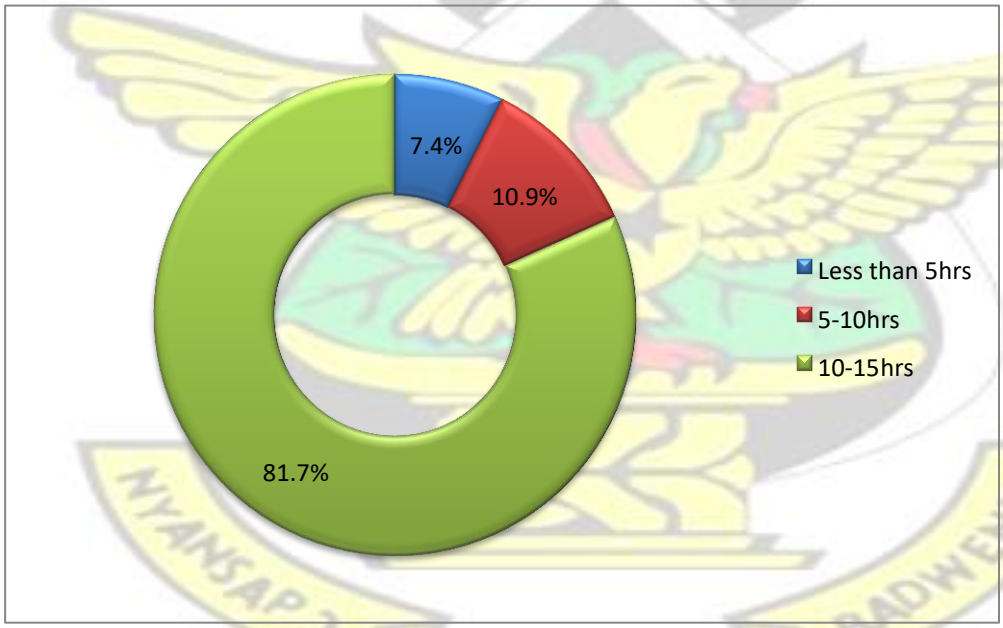

Figure 4.6: Distribution of the rider working hours

The dependence on the motorcycle taxi services is also buttressed by the fact that majority consider it as a main source of income. Also when asked why riders would prefer motorcycle taxi to conventional taxi or the trotro business, the majority (61%) think it is a quicker way of earning a

decent income compared to the other options. Respondents also indicated that the high cost of acquiring a taxi and the difficulty of securing a driver's license among others were deterrents.

4.2.5 Services provided

Services provided by the motorcycle taxis were for the conveyance of passengers and goods. The latter, involves movement of produce/goods to and from the markets and farms. No regulations are currently in place to ensure the limit of goods to be carried on the motorcycles. Some of the things being transported on the motorcycles include construction materials (e.g. cement, roofing sheets, and steel reinforcements rods), farming tools, coffin and water. Figure 4.8 was captured at Dabala where a rider was using his bike to carry steel reinforcement rods.

Figure 4.7: Rider carrying steel reinforcement rods

4.3 Motorcycle Taxi Users

Of the people interviewed, 71% were users of motorcycle taxi services. The reasons for their patronage of the services were many; they varied from ability to get to destination quicker, cheaper means of transport to the only mode available. The many reasons have been ranked in terms of frequency in the Figure 4.8.

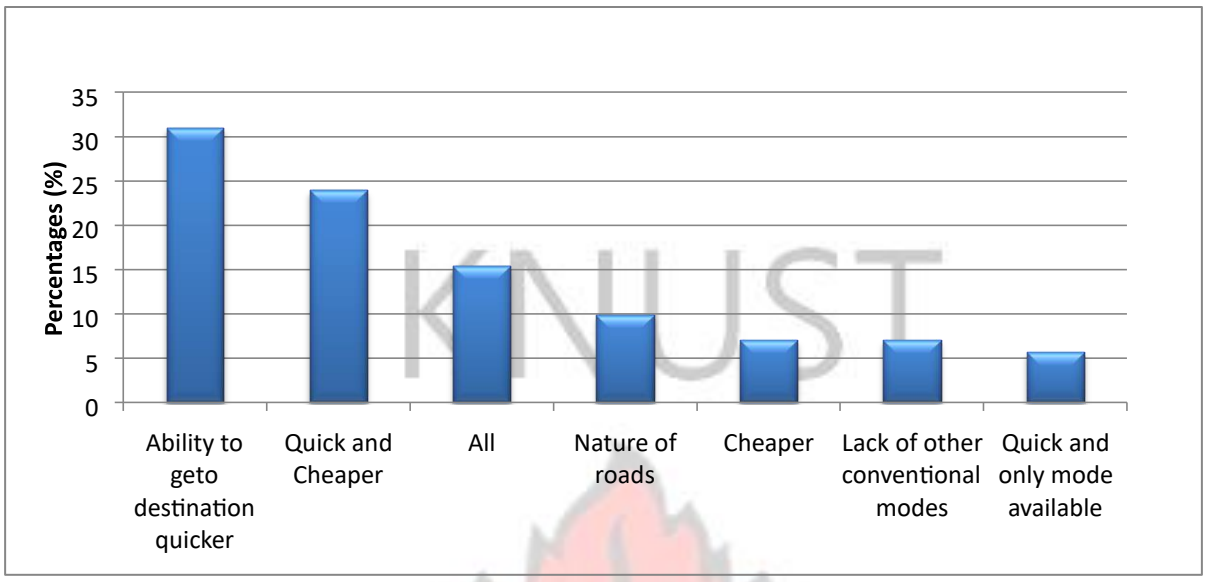

Figure 4.8: Reasons for patronizing motorcycle taxi services

4.3.1 Frequency of motorcycle taxi usage and duration

Data gathered showed that daily users constitute 43.7% whilst weekly and monthly users were 29.6% and 26.8% respectively (see Figure 4.9)

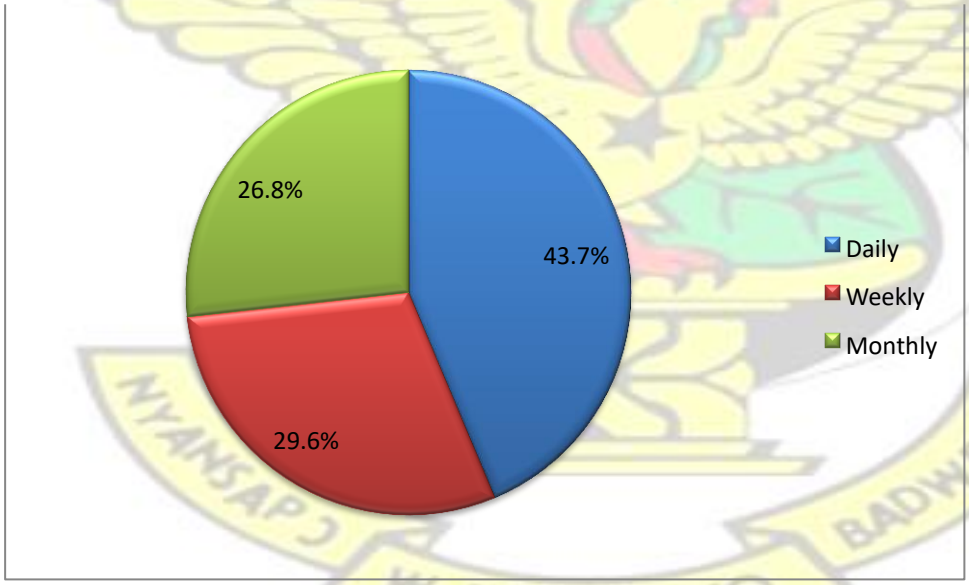

Figure 4.9: Pattern of motorcycle taxi usage

On duration of trips, most of the respondents (87.3%) said that their trips do not last longer than 30 minutes. Also a look at patronage within the last 3 years seems to have shot up as was the case for the number of new entrants into the motorcycle taxi services. From the respondents, new

motorcycle taxi users constituted 56.3% while those who have been using the motorcycle taxi services within the last 3 to 5 years constituted 33.8%. The remaining 9.9% are those who have been patronizing the taxi services a lot longer (i.e. for more than 5years).

Due to the short nature of most trips (usually within 30minutes) majority of fares charged is within GH₵ 1.00 to GH₵ 3.00

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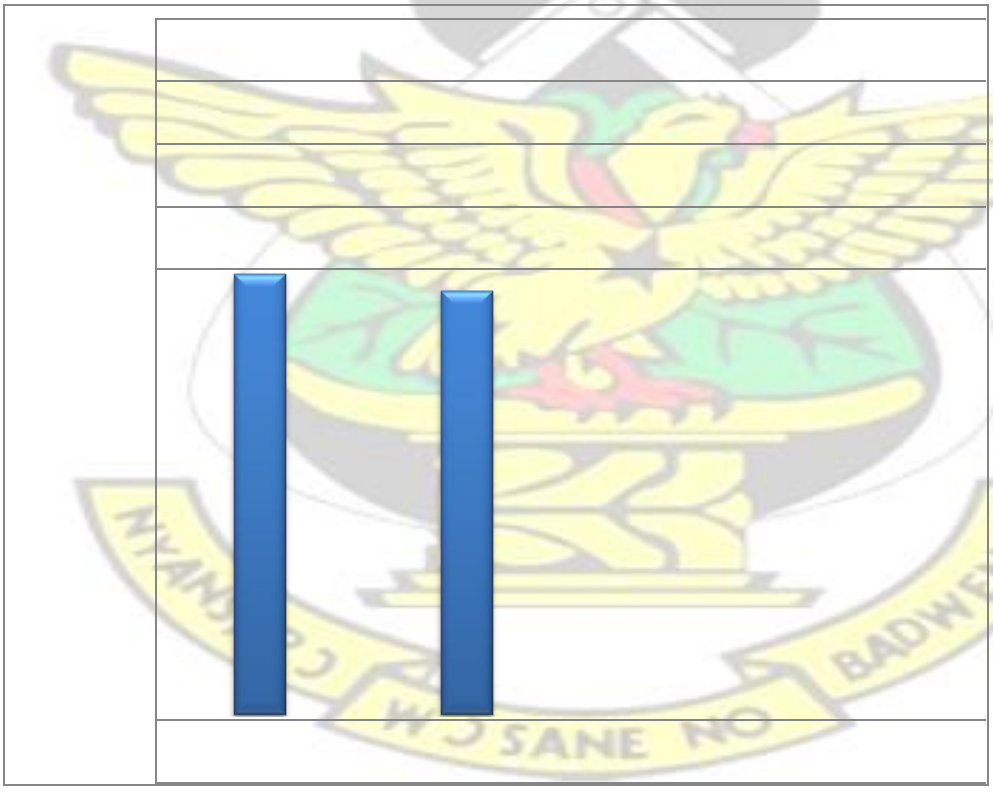
4.3.2 Trips purpose of users

Purposes of trips were classified into "to market", "to adjoining towns", "to farms" and "others".

The majority of the users (37%) assigned to the "to market" group were those that used the services to solely transport goods to and from the markets. Thirty-five percent of the users relied on the services for their inter-town trips, these users were recorded under "to adjoining towns". A few farmers (9%) employed the services to transport their farming tools to their farms. This category of users were recorded under "to farm". "Others" captured trip destinations to any other places (see Figure 4.11).



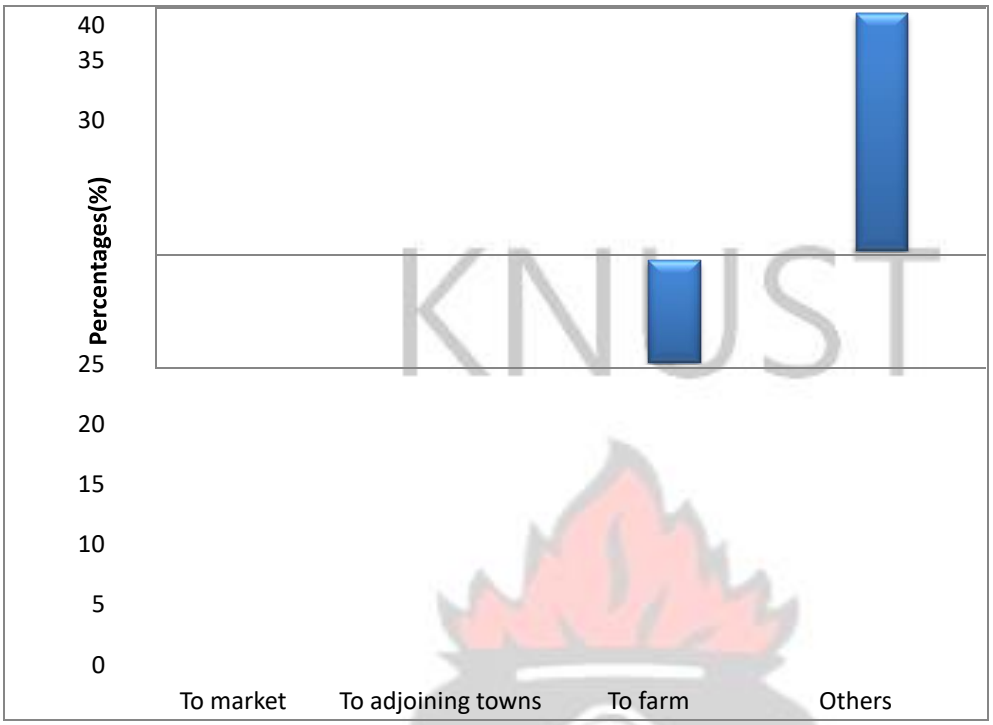


Figure 4.10: Trip purposes of motorcycle taxi users

4.3.3 Level of service provided

Majority (60.6%) of users found the service provided to be satisfactory but 22.5% however found it unsatisfactory. The rest of the respondents were however indifferent and thought the services provided were acceptable. Opinions on level of service are summarised in the pie chart in Figure 4.12.

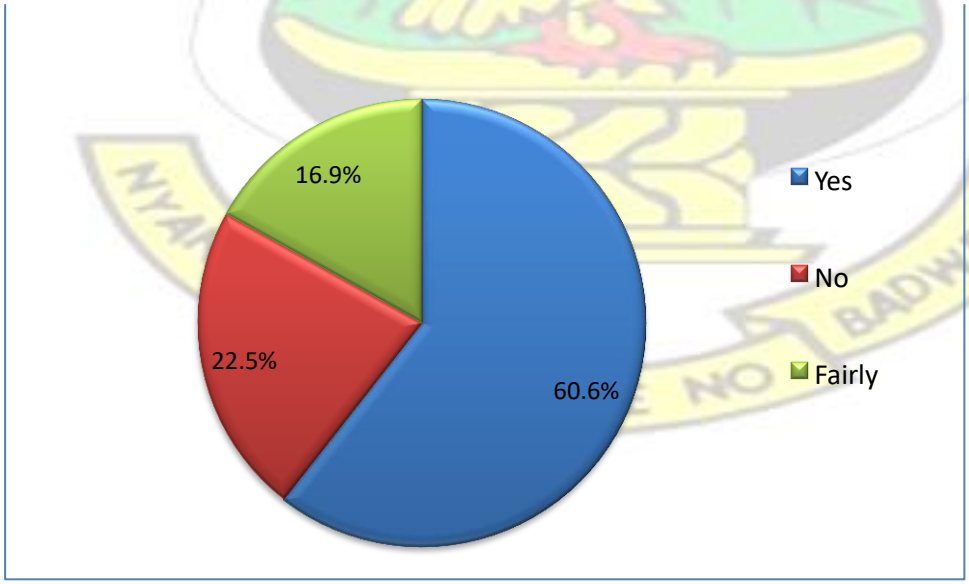


Figure 4.11: Satisfaction with level of service

Level of service was investigated further by asking respondents to comment on any bad experiences they might have had when using motorcycle taxis. The response rate was very low with most people either responding negatively or refusing to answer. For the few who responded, the leading concern was reckless riding. The data is presented in Table 4.1

Table 4.1: Negative experiences with motorcycle taxi usage

BAD EXPERIENCE	FREQUENCY	PERCENTAGE
Reckless Riding	7	6.03
Disrespectful riders	4	3.45
Accident prone	6	5.17
None	90	77.59
Riders cheat	3	2.59
Absence of safety measures	1	0.86
Bad odour on riders	3	2.59
Conflicts with other road users	2	1.72
TOTAL	**116**	**100.00**

4.4 Opinions on safety of motorcycle taxis

Safety assessments were made on the three (3) groups under study. These are the motorcycle taxi riders, users and non-users of the services.

4.5.1 Motorcycle taxi riders

Data gathered from the motorcycle taxi riders indicated that 32.4% of riders have been involved in an accident before. Even among those who have been involved in an accident, further scrutiny revealed that 64.5% have been involved in an accident only once. This is significant compared to data from urban areas where involvement in accident among users is about 72% (Tuffour and Appiagyei, 2014) and where traffic is relatively very heavy.

On the issue of helmet possession and usage, it was gathered that 98% of riders own crash helmets but only 50% wear them. Helmet usage by passengers was even lower, as only 40% of riders provide helmets for their passengers some of whom, especially women refuse to wear them.

4.4.2 *Motorcycle taxi users and non-users*

From the field data, 23.9% of the respondents have been involved in accidents before. This included 86.7% who have been involved only once. On helmet provision, only about 23% of passengers are offered helmets every time they ride and about 48% are never offered helmets (see Figure 4.13).

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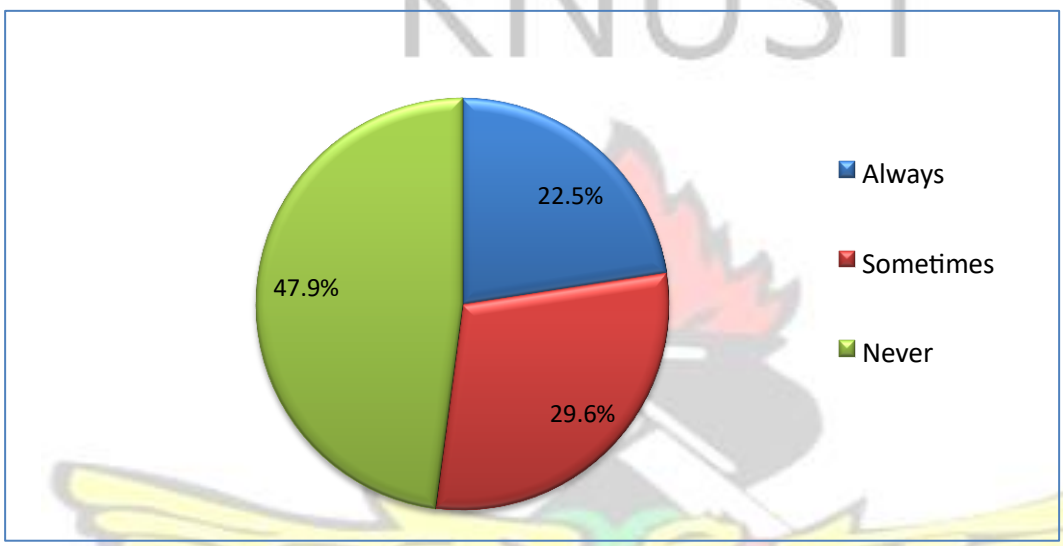

Figure 4.12: Helmet provision to riders

Further probing revealed that only 31% of passengers insist on wearing helmets for their ride and about 20% never even request for a helmet. In general, however, most motorcycle taxi users and non-users (66%) see motorcycle taxis as a very safe form of transport.

4.4.3 *Taxi/trotro drivers*

Most taxi and trotro drivers interviewed seem to have had one form of encounter with a motorcycle taxi rider. About 84% stated that they have been provoked during their business operations by a motorcycle taxi rider. It is therefore not surprising that the majority (59.2%) voted to discourage motorcycle taxi services. On reasons why patronage should be discouraged, safety concerns ranked the highest (46.6%). Those who thought the services should be encouraged did so mostly due to their convenience in accessing areas that other modes of transport could not. The data gathered on reasons for discouraging motorcycle taxi services are shown in Figure 4.14

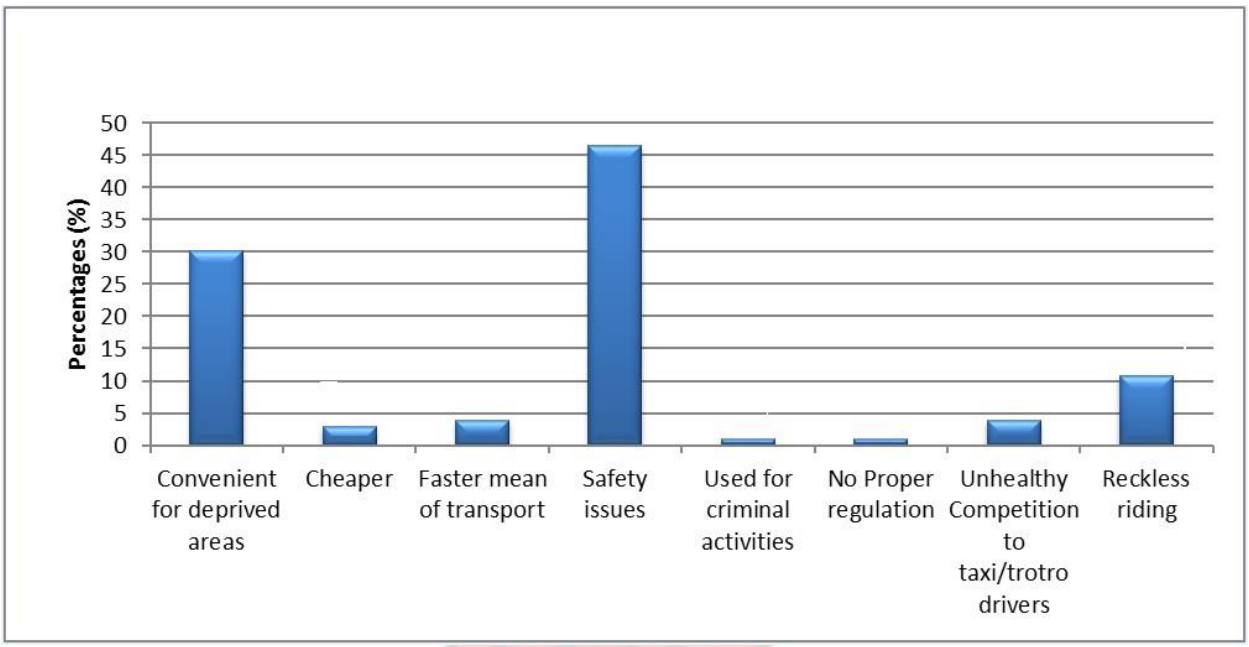

Figure 4.13: Reason for discouraging patronage

4.5 Illegality of the Operations

An overwhelming majority of respondents were aware of the illegality of the motorcycle taxi services. However there were mixed reactions as to whether the operations should be legalized or not. The motorcycle taxi riders were in full support of legalization and training to facilitate safety of operations. Surprisingly their competitors (taxi and trotro drivers) were in support of the services as only 15.3% supported the complete enforcement of the ban on operations. Over 84% rather supported the training and licensing of motorcycle taxi riders, the operations and proper regulation of the services. The users of the motorcycle taxi service also supported legalization of operations with 74.6% in favour and 25.4% against.

The support for legalisation comes mostly from the affordable nature of the services and the ability to ply on poor roads and provide door to door services. With its increasing usefulness to the residents and the rapid uptake in the rural setting among the youth, policy reforms need to be done promptly. If operations are going to be legalised, appropriate measures should be put in place to ensure safety and provide guidance on entry into the business. On the other hand, if it is still going to be illegal, then a strong stand should be taken to stop operations.

CHAPTER 5:

CONCLUSION AND RECOMMENDATIONS

5.1 Conclusions

The motorcycle taxi business has been noted as a major form of employment for mostly the youth. It also provides additional income for the riders who are engaged in the service on parttime basis. The approval rating of 74.6% creates a vivid picture of the key importance of the motorcycle taxi service in the lives of the rural people under study.

Acceptance rate of the service is mostly attributed to the cost of service, lack of other adequate modes of transport and flexibility of service. Unlike the urban areas where array of transportation modes exist, the rural areas are not seen as economically viable thereby setting a limitation on the availability of transportation modes. The motorcycle taxis are therefore bridging a much needed gap in rural public transport service provision.

The majority (43.7%) of users account for the high rate of daily trips, as result operators of the services worked mostly for 10-15 hours per day. Most trips made are made to and from the markets. Others are made to the adjoining towns and farms. Survey data showed that growth of service in the last three (3) years has been evident with 56.3% increase in the number of users and 51% of the operators joining the service within this period. Motorcycles are sometimes used to convey farm produce, water and certain constructional materials like cement and steel reinforcement rods.

In general, users and non-users of the service consider the motorcycle taxi service as a very efficient and safe mode of transport. Sixty-six percent of the respondents agreed with this assertion.

5.2 Recommendations

Motorcycle taxis play a major role in trip making in the rural towns studied. Even though there are some negatives associated with its use, the study has demonstrated their important role and characteristics in the rural context. It is in this light that the following recommendations are made:

- There is the need to take another look at the recent policy banning the use of motorcycles for public transportation in Ghana since the operational characteristics of motorcycles in the rural areas differ from urban. If possible, exceptions should be made for their use in rural operations.
- The laws on motorcycle users wearing of protective helmet and gear must be mandatory and strictly enforced to improve safety when used for public transportation.
- Since motorcycle transportation business contributes the socio economic well-being of rural areas in terms of youth employment and improved accessibility, motorcycle taxis should be encouraged, riders licensed and trained with strict enforcement of regulations.
- Further studies should be conducted into the usage of motorcycle taxi in other rural areas to determine whether the finding of this study could be extended to the entire country.

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APPENDICES

APPENDIX 1: QUESTIONNAIRE FORMS

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INFORMED CONSENT FORM
(MOTORCYCLE TAXI RIDERS)

TITLE: THE MOTORCYCLE IN RURAL PUBLIC TRANSPORT SERVICES PROVISION: A CASE STUDY OF THE VOLTA REGION OF GHANA.

Principal Investigator: Jacob Nelson

Address: School of Engineering, Civil Engineering Department, Kwame Nkrumah University of Science and Technology

Motorcycle taxis (Okada) is fast becoming a dominant contributor to Public Passenger Transport Services provision in Ghana. This is also becoming the case in most African countries. The absence of documentation and adequate regulation on motorcycle taxi services presents a major problem to the nation. It has therefore become necessary to document commercial motorcycle operations and provide a basis for developing a regulatory framework; hence the purpose of this questionnaire.

This survey is being conducted by Jacob Nelson, a student at the School of Engineering, Kwame Nkrumah University of Science and Technology to find out the role of motorcycles in rural public services in the Ho municipality of the Volta region. The information you provide is totally confidential and will not be disclosed to anyone. It will only be used for research purposes and possibly publication. Your participation is voluntary and you can withdraw from the survey after having agreed to participate. You are free to refuse to answer any question asked in the questionnaire.

This study will enable us find out the perception of taxi or trotro drivers as well as users and nonusers of motorcycles with respect to service provision in the Volta Region.

If you have any questions on the survey, please do not hesitate to contact **JACOB NELSON** on **0244669259.** Signing this consent indicates that you understand what will be expected of you and are willing to participate in this survey.

In each of the following questions below, please select an option(s) which best reflects your opinion. In cases where "other (specify)" is the option, please specify your option.

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THIS SHOULD TAKE ABOUT 10 MINTURES OF YOUR TIME.
Thank you.

CONSENT

I hereby provide INFORMED CONSENT to take part in the role of motorcycles in rural public transport service study.

....

Volunteer signature Date

Participant identification number

THE MOTORCYCLE IN RURAL PUBLIC TRANSPORT SERVICES PROVISION: A CASE STUDY OF THE VOLTA REGION.

QUESTIONNAIRE

MOTORCYCLE RIDERS

Demographic Information			
CORE: Demographic Information			
Question		**Response**	**Code**
1	Sex (*Record Male / Female as observed)*	Male 1 Female 2	D1
2	How old are you?	Years └┘└┘	D2
EXPANDED: Demographic Information			
3	What is the **highest level of education** you have completed?	No education 1 Basic to SHS 2 University 3	D3
4	What is your **marital status**?	Single 1 Currently married 2	D4
Business Information			
5	Why did you enter the motorcycle taxi business?	Source of revenue(employment) 1 For leisure 2 Other..... 3	B1
6	How did you enter the motorcycle taxi business?	By my own desire 1 Through a friend 2 Other 3	B2

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7	How would you describe the employment offered you by motorcycle taxi business?	Temporary/part-time job 1 Full-time job 2	B3
8	How many hours do you work in a day? ***Specify*** *Starting Time* *Closing Time*	---------- ----------	B4
9	Why ride a motorcycle taxi and not be a taxi or trotro driver?	Nature of roads 1 Length of trips 2 Economic reason 3 Other, please specify ---------- 4	B5
10	How long have you been riding a motorcycle taxi?	i) Less than 3 years 1 ii) 3-6 years 2 iv) More than 6years 3	B6
11	Is the motorcycle owned by you?	Yes 1 No 2 If yes, how many motorcycles do you own ---------- If no, is it rented and how much do you pay daily ---------- If neither of the above, how did you acquire it? Please state ----------	B7
12	If you answered yes **to question 17, please** state how you financed the purchase of your motorbike?	Personal savings 1 Financial loans 2 Work and pay basis 3 Other, please specify ---------- 4	B8

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13	What is the horsepower (HP) of your motorcycle?	80-110HP 1 111-125HP 2 Above 125HP 3	B9
14	Do you have a loading point from where you operate?	Yes 1 No 2 If Yes, where is it located ----------	B10
15	Do you belong to any motorcycle taxi riders association?	Yes 1 No 2 If Yes, what is the name of the association ---------- What is the size of the membership of your group----------	B11

Service information

Question		**Response**	**Code**
16	What is the average length of a trip?	Less than 1 km 1 Between 1km-3km 2 Over 3km 3	S1
17	What is the usual number of people you carry on your motorcycle?	One 1 Two 2 Three or more 3	S2

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18	**Pricing** On average, how much do you charge per trip?	**GH₵**	S3

19	**Expenditure** i) On average, how much do you spend on fuel daily? ii) On average, how much do you spend on servicing and maintenance monthly?	**GH₵** ..... **GH₵**	S4
20	Which other services do you offer? ***Tick as many as appropriate***	Carrying goods to and from markets 1 Carting of farm produce 2 Other 3	S5
21	Who are your major customers?	Farmers 1 Traders 2 Market women 3 Others, please specify..... 4	S6
Accident and safety information			
22	How did you receive your training before starting to operate commercial services?	Through a friend 1 Learnt it myself 2 Through commercial driving school 3 Other..... 4	A1
23	Do you have a motorcycle riders' license?	Yes 1 No 2	A2

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24	Have you ever been involved in an accident operating your motorbike as a taxi?	Yes 1 No 2 If ***Yes***, how many times?..... 3	A3
25	Do you own a crash helmet?	Yes 1 No 2	
26	If Yes, do you wear a crash helmet on your trips?	Always 1 Sometimes 2 Don't like wearing it 3	A4
27	Do you provide a crash helmet for your passengers?	Yes 1 No 2	A5
28	Have you ever been harassed by the police for operating motorbike taxi services?	Yes 1 No 2 If Yes, how many times?..... 3 And why..... 4	A6
29	What measures do you suggest must be put in place to make your operations safe? *(Several answers possible)*	i) ii) iii) iv) v)	A7

THANK YOU

INFORMED CONSENT FORM
(*USERS and NON-USERS OF MOTORCYCLE TAXIS*

TITLE: THE MOTORCYCLE IN RURAL PUBLIC TRANSPORT SERVICES PROVISION: A CASE STUDY OF THE VOLTA REGION OF GHANA.

Principal Investigator: Jacob Nelson

Address: School of Engineering, Civil Engineering Department, Kwame Nkrumah University of Science and Technology

Motorcycle taxis (Okada) is fast becoming a dominant contributor to Public Passenger Transport Services provision in Ghana. This is also becoming the case in most African countries. The absence of documentation and adequate regulation on motorcycle taxi services presents a major problem to the nation. It has therefore become necessary to document commercial motorcycle operations and provide a basis for developing a regulatory framework; hence the purpose of this questionnaire.

This survey is being conducted by Jacob Nelson, a student at The School of Engineering, Kwame Nkrumah University of Science and Technology to find out the role of motorcycles in rural public services in the Ho municipality of the Volta region. The information you provide is totally confidential and will not be disclosed to anyone. It will only be used for research purposes and possibly publication. Your participation is voluntary and you can withdraw from the survey after having agreed to participate. You are free to refuse to answer any question asked in the questionnaire.

This study will enable us find out the perception of taxi or trotro drivers as well as users and nonusers of motorcycles with respect to service provision in the Volta Region.

If you have any questions on the survey, please do not hesitate to contact JACOB NELSON on **0244669259.**

Signing this consent indicates that you understand what will be expected of you and are willing to participate in this survey.

In each of the following questions below, please select an option(s) which best reflects your opinion. In cases where “other (specify)” is the option, please specify your option.

THIS SHOULD TAKE ABOUT 10MINTURES OF YOUR TIME.

Thank you.

KNUST

CONSENT

I hereby provide INFORMED CONSENT to take part in the role of motorcycles in rural public transport service study.

....

Volunteer signature Date

Participant identification number

THE MOTORCYCLE IN RURAL PUBLIC TRANSPORT SERVICES PROVISION: A CASE STUDY OF THE VOLTA REGION.

QUESTIONNAIRE

MOTORCYCLE TAXI USERS/NON-USERS

Demographic Information
CORE: Demographic Information

Question		Response		Code
1	Sex (*Record Male / Female as observed)*	Male Female	1 2	D1
2	How old are you?	Years	⌊_⌊_⌋	D2
EXPANDED: Demographic Information				
3	What is the **highest level of education** you have completed?	No education Basic to SHS University	1 2 3	D3
4	What is your **marital status**?	Single Married	1 2	D4
5	Are you a motorcycle taxi user?Are you an Okada user?	Yes No If No, move to 23	1 2	D5

MOTORCYCLE TAXI USERS

Demand Characteristics

6	Why do you patronize motorcycle taxi services? *(Choose as many as appropriate)*	Ability to get to my destination quicker Cheaper Lack of other conventional modes Because of nature of road Tick as many as applicable	1 2 3 4 5	C1
7	On average, how often do you use a motorcycle taxi?	Daily Weekly Monthly	1 2 3	C2

8	On average, how long does your motorcycle taxi trip last?	Less than 30 minutes Between 30 minutes to 1 hour More than 1 hour	1 2 3	C3
9	How long have you been patronizing the motorcycle taxi services?	<3yrs 3-5 years >5years	1 2 3	C4
11	On average, how much do you pay per one-way trip?	GHC		C5
12	What are the primary destinations of your motorcycle taxi journeys?	To and from farm To and from markets To and from other towns Personal Business Multi-purpose	1 2 3 4 5	C6
13	Are you happy with level of service offered by the motorcycle taxi service providers?	Yes 2	1 No	C7
14	Do you have any bad experiences with patronizing motorcycle taxi services? *(Several answers possible)*	i) ii) iii) iv)		C8
15	Do you have any complaint with the use of the motorcycle taxi services? *(Several answers possible)*	Ride too fast and reckless Unsafe Too much conflicts with vehicles Fares too high Involvement and use of motorcycle taxis to commit crime	1 2 3 4 5	C9
16	Are you aware that the motorcycle taxi is an illegal public transportation mode?	Yes No	1 2	C10
17	Would you support the legalization of motorcycle taxi services?	Yes No	1 2	

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18	Have you ever been involved in an accident while on a motorcycle taxi?	Yes No *If **Yes**, show many times*.....	1 2	C11
19	Do you know of anybody who has been involved in a motorcycle taxi accident?	Yes No	1 2	C12
20	Are you provided with crash helmet when you travel on a motorcycle taxi?	Always Sometimes Never	1 2 3	C13
21	Do you insist on wearing one?	Always Sometimes Never	1 2 3	C14
22	Do you think motorcycle taxi is a safe mode of public transport?	Yes No	1 2	C16

MOTORCYCLE TAXI NON-USERS

23	Why don't you use motorcycle taxis service? *(Several answers possible)*	It is illegal Drivers ride too fast and reckless It is unsafe Provides no shelter during rain Others……	1 2 3 4 5	N1
24	Are you aware motorcycle taxi is illegal means of public transportation?	Yes No	1 2	N2

25	Do you support complete ban on motorcycle taxi services?	Yes 1 No 2 If Yes, give reasons i)..... ii)..... iii).....	N3
26	Would you be interested in travelling with the service if the motorcycle taxi service is legalized and regulated?	Yes 1 No 2 *If your answer is **Yes**, what will be the primary destinations of your motorcycle taxis journeys? Tick as many as applicable.* To and from farm 1 To and from markets 2 To and from other towns 3 Personal Business 4 Other 5	N4

THANK YOU

INFORMED CONSENT FORM

(TAXI/TROTRO DRIVERS)

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Principal Investigator: Jacob Nelson

Address: School of Engineering, Civil Engineering Department, Kwame Nkrumah University of Science and Technology

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KNUST

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Thank you.

CONSENT

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KNUST

....

Volunteer signature Date

Participant identification number

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CORE: Demographic Information			
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EXPANDED: Demographic Information			

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MOTORCYCLE TAXI USERS

Demand Characteristics

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21	Do you insist on wearing one?	Always Sometimes Never	1 2 3	C14
22	Do you think motorcycle taxi is a safe mode of public transport?	Yes No	1 2	C16

MOTORCYCLE TAXI NON-USERS

23	Why don't you use motorcycle taxis service? *(Several answers possible)*	It is illegal Drivers ride too fast and reckless It is unsafe Provides no shelter during rain Others……	1 2 3 4 5	N1
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KNUST

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THANK YOU

KNUST