



## ASSESSING THE IMPACTS OF COMPLIANCE OF MOTOR CYCLE PUBLIC TRANSPORT OPERATORS WITH ROAD SAFETY REGULATIONS IN GUCHA SUB-COUNTY.

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### ABSTRACT

The study examines the impacts of compliance of motor cycle public transport operators with road safety regulations. The study focused on Gucha sub-county within Kisii County in Kenya. The entire population of this sub-county is ninety-three thousand five hundred and thirty people. This was the target population with emphasis on four groups of people thus riders, passengers, traffic police and health professionals. The sample size of this study was 220 which was attained using simple random sampling method. The tools that were used to collect data include questionnaire with structured and unstructured questions and an interview guide. The pilot study was conducted in Nyaribari Chache sub-county within Kisii County. Quantitative data was analyzed using descriptive statistics by organizing it into frequency distribution tables and percentages. The study found that adherence to road safety regulations enhances personal safety, albeit at increased operational costs. Evidence shows reduced accidents, improved customer satisfaction, and enhanced operational efficiency, highlighting the benefits and challenges of compliance in enhancing overall safety and service quality. By doing so, they are not only able to improve the safety results but also optimize the efficacy regarding the motorcycle public transport in the region, which can lead to the sustainability of the particular companies and their ability to withstand the regulatory changes. There is an urgent need to strengthen the performance of measures relating to enforcement of the existing road safety legal requirements. Policy makers should encourage the operators to put more funds into safety by allowing any form of tax credit for capital expenditure to be deposited in new safety equipment and other improved infrastructure.

**Keywords:** Motor cycle; Road safety regulations; Motor cycle transport; *boda boda*.

### BACKGROUND

Motorcycle public transport commonly known as ‘boda bodas’ has adopted the phrase “people’s carrier” in Gucha Sub-County because an increasing number of residents are turning to motor cycle public transport as means of transport due to its affordability and flexibility. Many young people earn their living as motor cycle public transport operators; hence the popularity of this means of transportation in the local economy. Nevertheless, the development of this sector has been steadily bringing several road safety issues with new opportunities and challenges to the operators and the passengers. Road safety is one of the most significant concerns of public health in most countries, with motorcycle crashes contributing to most of the road traffic injuries and deaths in Kenya. The

National Transport and Safety Authority (NTSA), for instance, has observed an increasing trend in the incidence of motorcyclist injuries admitting that there is a compelling need to enhance the use of protective measures, and ensure that individuals adhere to the legal requirements set for motorcycle transport. These concerns are more so in Gucha sub-county, where more and more people are using these motorcycles for daily transport, business, and deliveries to the outback.

Currently, the Kenyan government has incorporated various road safety measures meant to help minimize the incidence of traffic accidents and improve safety of all the users of the roads. These include helmet usage, speed control measure, proper license acquisition, proper car maintenance, and restriction on loads carriage. From the above measures, it appears that motorcycle operators strongly resist wearing helmets with low levels of compliance because of poor enforcement, low levels of health literacy, and socio-economic barriers. To design effective interventions for increasing levels of safety, adoption of regulatory standards on the road it is important to appreciate factors that inform compliance or otherwise. The purpose of this study is thus, to evaluate the effect of regulation compliance among motorcycle public transport operators with a view of evaluating the level of safety compliance and the consequent risk of general incidences of accidents in Gucha Sub-County. To this end, this study aims at examining the nature and extent of noncompliance in the motor cycle public transport sector, the factors that may be responsible for such noncompliance and the overall feasibility of implementing change strategies as well as a recommendation on safety and sustainability of the sector.

This is especially important now that there has been a raise in the rate of motorcycle accident and awareness of the dangers that come with transportation using motorcycles. As a result of the research targeting Gucha Sub- County, the findings derived from this study are not only localized but can also be adopted in other regions of the country that share similar problems with motorcycle transportation. The study will culminate into research which will supplement the general discourse on road safety and subsequently guide the policy formulation for the protection of operators and passengers in not only Kenya but also in other regions.

## **STATEMENT OF THE PROBLEM**

In Gucha Sub-County, the use of motorcycles as a mode of public transport has significantly increased due to their affordability and ability to navigate through congested areas and remote locations. However, this surge in motorcycle public transport has been accompanied by a rise in road accidents, injuries, and fatalities. Despite the implementation of road safety regulations aimed at curbing these issues, compliance among motorcycle operators remains inconsistent.

The problem lies in the apparent gap between the established road safety regulations and the actual practices of motorcycle public transport operators. Many operators lack adequate training, proper licensing, and often disregard traffic laws, leading to hazardous driving behaviors. This non-compliance not only endangers the lives of the operators and their passengers but also poses a significant risk to other road users. There is a limited understanding of the factors influencing compliance among motorcycle operators in Gucha Sub-County. Socio-economic factors, enforcement practices, and the operators' perceptions of the regulations could all play critical roles. Without addressing these underlying issues, efforts to improve road safety and reduce accidents may remain ineffective.

This study investigates the impacts of compliance of motorcycle public transport operators with road safety regulations in Gucha Sub-County. By identifying the barriers to compliance and evaluating the effectiveness of current enforcement strategies, the research seeks to provide actionable recommendations to enhance road safety and protect the lives of all road users in the region.

## **LITERATURE REVIEWS**

It is noteworthy that the use of motorcycle taxis, also called motor cycle public transport in East Africa has been the subject of numerous investigations in the given and other contexts. For instance, motorcycle transport has been on the increase in Nigeria, and this has been viewed as the reason for the development of the economy and also a reason for worry due to the high risks involved. As noted by Adejumo, Adegoke, Adewuyi, and Olawale, (2020), the use of motorcycle taxis has given rise to noble sources of income and enhanced transport within and between the rural and urban settings. However, the authors (Adejumo, Adegoke, Adewuyi, & Olawale, 2020) also assert that failure to observe traffic laws has resulted in the reckoning of this subsector by high incidences of traffic accidents and associated dangers. Ideological factors that lead to non-compliance are exploitation of the laws, insufficient training, and misuse of authorities for making money than implementing the laws.

Like in other countries, the industry of motor cycle in Uganda has also continued to expand and influence road safety in the country. Nabaweesi and Galukande (2021) noted that in a society where there might be minimal transport means, motorcycle taxis form part of the transport sector. However, the study establishes that there are still some serious concerns because the motorcyclists' conduct which includes non-use of helmets, operation without proper licenses among other concerns. In a study conducted by Kivumbi, Kitara, and Mwaka (2020), they identified economic factors, low awareness and cultural perception towards the barriers which lead to high rates of road traffic accidents involving motorcyclists. To counter this problem the authors, urge for increased efforts at educating members of the public on traffic laws as well as the application of strict laws against violation of the same.

The Kenyan experience also affords an understanding of similar issues in the incorporation of motor cycle public transport into its transport networks. Mbugua, Wambua, and Karisa. (2019) propose in their research that although motorcycle taxis have enhanced access and provided incomes for many; the sector is, nevertheless, characterized by high incidences of accidents because clients and riders do not adhere to traffic laws. To this end, the present research draws attention to the importance of systematic training initiatives concerning the riders and enhanced efforts in the implementation of road traffic regulations. Further, Wachira and Mugo (2021) noted that such measures as helmet laws, road safety campaigns have not gained much traction because unlike the developed countries, authorities implementing them have not appropriately enforced the laws and other operators considered such measures as barriers to their operations.

Another study by Otieno, Maina, and Mwangi (2022). carried out in Kenya shows that motorcycle accidents contribute to a substantial number of road traffic accidents patients who seek care at hospitals. The authors note that most of such injuries could be avoided if countries complied more vigorously to existing traffic laws and if there were enhanced publicity on the same. However, the study stresses on the commitment of the government in efforts towards improving road safety and that they should make necessary provisions for use in the procedures. The implications of these findings are the necessity to understand the causes of non-compliance and, therefore, ensure that educational and preventive interventions are implemented among the operators of motorcycles to avoid further increase in accidents and casualties among the public.

## **THEORETICAL FRAMEWORK; SYSTEMS THEORY**

In order to establish the various factors that could determine the level of adherence to road safety regulations among motorcycle public transport operators in Gucha sub-County, systems theory seems to be quite useful. The general systems theory originated from Bertalanffy, von Rapoport,

and Rapoport. (1964) as a structure by which the academic world understands and studies situations as connected units working cohesively in the specific context of their surroundings. Such perspective is useful in conceptualizing patterns responsible for compliance with roads safety measures, which may include economic factors, policing, other riders' behavior and culture in societies. As a result of this, this study will be undertaken with the application of systems theory which is aimed at showing how various components of the motor cycle transport system in Gucha Sub-County are connected and how they impact each other. For instance, there is an economic rationality for riders to optimize income and achieve this by not following the set protocol. Likewise, efficiency of policing cannot be viewed without connection to availability of resources; training of traffic police; and cooperation of the community in tackling offenses. Such knowledge may help unveil the potential manipulation targeted at the compliance boost accompanied by measures fostering the road safety increase.

Looking at the factors through a system's theory perspective the high risk and rate of motorcycle accidents can be explained. It emphasizes that different global approaches to the problem, addresses multiple aspects of the issue and are involved in complex interrelations and sum of positive effects rather than benefiting from singular remedial operations that are commonly less efficient in the long term. Accordantly, Kim and Ahmed (2021) found that the road safety issues are actually multifaceted in their works. It is evident how the systems theory plays an important role in three different levels in this work. First, it assisted in identifying the present government traffic rules and regulations through effective enforcement measures meant to promote the interpretation and application of road traffic legislation in Kenya. Moreover, this approach enhanced the establishment of risk indicators associated with the 'Public Motorcycle Operators'. Furthermore, they helped to enhance knowledge about current behavior of people, including operators and police officers, which also enhanced the improvements of road security. For any system to be retained constant for its use, some tests must be run with a view of determining the accuracy of the results produced.

### **Research Design**

Coopers and Schindler (2006) define research design as the blueprint for the collection, measurement, and analysis of data. In this study, a descriptive survey research design was employed. Descriptive survey research is chosen for its capacity to gather extensive information efficiently by administering a single questionnaire to a large number of respondents. This approach aligns with the aim of obtaining pertinent and precise information about the phenomena under investigation, as emphasized by Lokesh-Koul (2004). Therefore, the descriptive survey design is well-suited to fulfill the objectives of the study by providing a comprehensive understanding of road safety regulations compliance by motorcycle public transport services in Gucha sub-county, Kenya.

### **Target Population**

Population, as defined by Polit and Beck (2004), refers to the aggregate or totality of individuals conforming to a set of specifications. In the case of the Gucha sub-county, its entire population is reported to be ninety-three thousand five hundred and thirty people based on the 2009 Census data. However, within the context of motorcycle public transport services, the population of interest extends beyond just residents to include various stakeholders involved in the industry. According to the Bomachoge "boda boda" Savings and Credit Cooperative Society Limited (SACCOS), the sub-county is home to 60 motorcycle operator stages situated along major roads. These stages accommodate varying numbers of public motorcycle operators, in addition to numerous

independent operators who are not affiliated with the Sacco. Furthermore, the population under study also encompasses individuals such as victims of accidents (including pillion passengers), traffic police officers, and health professionals who may be involved or affected by road safety issues related to motorcycle transport in the sub-county.

### Sampling Procedure and Techniques

**Table 1: Total number of target population and sample size**

S/No	Group	Target Number	Sample size
1	Motorcycle Taxi Operators	433	130
2	Passenger of Motorcycle Taxi Operators	177	53
3	Traffic Police Officers	9	9
4	Health Professionals	93	28
5	TOTAL	712	220

The researcher employed a simple random sampling method to ensure the desired representation within the population of study. The target population includes motorcycle taxi operators, passengers, traffic police officers, and medical practitioners. For the selection of motorcycle taxi operators and passengers, simple random sampling was utilized to choose a representative sample from the motor cycle public transport "boda boda" operators and passengers. However, key informants such as traffic police officers and health professionals were selected purposively.

Mugenda and Mugenda (2003) suggest that a sample size ranging from 10% to 50% is acceptable. Therefore, to determine the sample size of motor cycle operators, the researcher set aside Ogembo, the headquarters stage, and selected 30% of the remaining fifty-nine stages. Simple random sampling was conducted by writing the names of the fifty-nine stages on pieces of paper, which was then folded. Each stage had an equal chance of being selected, and seventeen stages were randomly chosen, along with Ogembo, totaling eighteen stages for the research. Similarly, for passengers, a compiled list of passengers treated in various health facilities was obtained, and the thirty percent rule was applied to determine the number of passengers to be interviewed.

Given the limited number of traffic police officers, the researcher opted to include nine officers since three ranks are represented and are actively involved in traffic control. Regarding health professionals, as there are ten health facilities, staffing distribution data from Gucha Level Four Hospital was utilized, and again the thirty percent rule was applied, following the guidelines proposed by Mugenda and Mugenda (2003).

### Data Collection Procedure

The study relied on primary data sources, which involve collecting data directly from the respondents. The primary methods of data collection employed in the study included questionnaires and interview guides. Questionnaires were distributed to gather structured responses from respondents, allowing for standardized data collection across a large sample size. Additionally, interview guides were used to conduct in-depth interviews with selected participants, enabling the exploration of nuanced perspectives and insights related to road safety regulations compliance by motorcycle public transport services in Gucha sub-county, Kenya. These primary

data collection methods facilitated the gathering of comprehensive and firsthand information directly from the individuals involved, ensuring the validity and reliability of the study findings.

**Data Collection Instruments**

The tools utilized for data collection consisted of questionnaires containing both structured and unstructured questions. Structured questionnaires were administered to residents to gather quantitative data, enabling the systematic collection of information on specific variables of interest in a standardized format. These structured questions facilitated the numerical analysis of responses, providing quantitative insights into road safety regulations compliance among residents.

**FINDINGS**

**Response rate**

The researcher issued 220 questionnaires, 206 (93.64%) of the respondents returned the questionnaires whereas 14 (6.36%) of the questionnaires were not returned, therefore the study had a respondent rate of 93.64%.

**Demographic study**

The study revealed that 193(93.7%) of the respondents were male while 13(6.3%) of the respondents were female. The study was therefore not biased since both genders were involved as respondents

**Table 2: Gender**

		<b>Frequency</b>	<b>Percent</b>	<b>Valid Percent</b>	<b>Cumulative Percent</b>
Valid	Male	193	93.7	93.7	93.7
	Female	13	6.3	6.3	100.0
Total		206	100.0	100.0	

**Age**

The study also found out that 121(58.7%) of the respondents were between 18 to 30 years of age, 54(26.2%) of the respondents were between 31 to 40 years of age, 23(11.2%) of the respondents were between 41 to 50 years of age while 8(3.9%) of the respondents were above 50 years of age. Majority of the respondents were between 18 to 30 years of age.



**Table 3: Age**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18 - 30 years	121	58.7	58.7	58.7
	31 - 40 years	54	26.2	26.2	85.0
	41 - 50 years	23	11.2	11.2	96.1
	Above 50 years	8	3.9	3.9	100.0
	Total	206	100.0	100.0	

### Impacts of compliance on motor cycle public transport operators

The study sought to examine the impacts of compliance on motor cycle public transport operators with road safety regulations in Gucha sub-county. The study findings revealed that a mean of 3.9369 with a standard deviation of 1.34015 of the respondents suggested that compliance with road safety regulations has improved the safety of operators, a mean of 3.8981 with a standard deviation of 1.35585 of the respondents revealed that following road safety regulations has increased the cost of operating the motorcycle. The study also revealed that a mean of 3.2282 with a standard deviation of 1.42500 of the respondents revealed that adhering to safety regulations has reduced the number of accidents experienced, a mean of 4.0097 reflecting a standard deviation of 1.35066 of the respondents revealed that compliance with safety regulations has positively affected customer satisfaction while a mean of 4.0922 with a standard deviation of 1.29774 of the respondents revealed that observing road safety rules has enhanced overall efficiency of operators.

**Table 4: Impacts of compliance on motor cycle public transport operators**

	N	Minimum	Maximum	Mean	Std. Deviation
Compliance with road safety regulations has improved my safety as an operator.	206	1.00	5.00	3.9369	1.34015
Following road safety regulations has increased the cost of operating my motorcycle.	206	1.00	5.00	3.8981	1.35585
Adhering to safety regulations has reduced the number of accidents I experience.	206	1.00	5.00	3.2282	1.42500
Compliance with safety regulations has positively affected customer satisfaction.	206	1.00	5.00	4.0097	1.35066
Observing road safety rules has enhanced my overall efficiency as an operator.	206	1.00	5.00	4.0922	1.29774
Valid N (listwise)	206				

### **Reliability Statistics**

To assess the internal consistency of the items used in the study, a reliability analysis was conducted. The results are summarized in Table 5 below. The reliability analysis aimed to determine the internal consistency of the four items included in the study, which measured various aspects of the constructs under investigation. Based on standardized items, Cronbach's Alpha slightly increased to .802. This slight increase indicates that standardizing the items (i.e., ensuring that each item has the same mean and standard deviation) marginally improved the internal consistency of the scale.

The reliability analysis demonstrated that the items used in the study exhibit good internal consistency, as evidenced by a Cronbach's Alpha value of .798. This indicates that the items are consistently measuring the intended constructs, providing confidence in the reliability of the data collected through these measures.

**Table 5: Reliability Statistics**

<b>Cronbach's Alpha</b>	<b>Cronbach's Alpha Based on Standardized Items</b>	<b>N of Items</b>
.798	.802	4

### **CONCLUSIONS**

Based on the study findings on the impacts of compliance with road safety regulations among motorcycle public transport operators in Gucha sub-county, it is evident that adhering to these regulations has significant implications. Firstly, operators reported that compliance has enhanced their personal safety. This indicates that following safety measures such as wearing helmets and observing traffic laws plays a crucial role in mitigating risks associated with motorcycle operations. While compliance improves safety, it also entails increased operational costs. Operators mentioned that adhering to regulations has raised their operational expenses, possibly due to investments in safety gear and training. There is noticeable evidence suggesting that adherence to safety regulations correlates with a reduction in the number of accidents experienced. This highlights the effectiveness of regulations in preventing road incidents and improving overall public safety.

Complying with safety regulations has a positive impact on customer satisfaction. Operators reported that passengers value and prefer operators who prioritize safety, which can lead to increased trust and loyalty among customers. Observing road safety rules contributes to overall operational efficiency for operators. This includes smoother operations, fewer disruptions due to accidents, and better adherence to schedules, which are crucial for the efficient functioning of public transport services.



## RECOMMENDATIONS

There is an urgent need to strengthen the performance measures relating to enforcement of the existing road safety legal requirements. This can be carried out through routine inspection and assessment of the operations by the regulators and policy makers whereby the operators have to follow the set and laid down safety measures including the wearing of helmets and road worthy checks among others. Policy makers should encourage the operators to put more funds into safety by allowing any form of tax credit for capital expenditure to be deposited in new safety equipment and other improved infrastructure. Some of the governance strategies worth implementing include multi-stakeholder partnerships with the emphasis on inclusive participation of government departments, transport stakeholders, and local populations. Cooperating can help to share materials, experience, and effective practices described in the academic and professionals' literature.

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