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Bodaboda Riders' Behavior on Road Safety Socio-Economic Wellbeing of Lodwar Town Residents in Turkana County, Kenya

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Abstract

The *Bodabodas* are associated with a significant accident risks and have led to public health epidemic. The Risky riders' traffic behavior coupled with the tendency of the riders to operate like organized urban militia, have often been associated with disruption of socio-economic activities, road accidents, injuries and deaths. This study sought to explore the influence of Bodaboda Riders' traffic Behaviour on Road Safety and the socio-economic wellbeing of Lodwar town residents. A cross-sectional study was conducted targeting 17,210 households in Lodwar town in Turkana County. The study employed descriptive research design that involved collection of both quantitative and qualitative data from residents, motorcycles riders, traffic police officers, and health care workers in Lodwar town. The quantitative data was analyzed by use of frequency counts and percentages cross-tabulations. The study also collected qualitative data from key informant interviews involving key stakeholders and was analysed using thematic analysis of the textual data. The survey data was analyzed using statistical package for social sciences (SPSS) version 23.This study showed that Road Safety and the socio-economic wellbeing were influenced by risky bodaboda riders' traffic behaviors. The study established from the respondents that *Bodaboda's* ownership and traffic behavior affected Road Safety and Socio-economic Wellbeing of residents of Turkana Central Sub County by X2, (4, N=335), P=.05. it was established that proportion of respondents to a large extent agreed that bodaboda business influenced Road Safety and Socio-economic wellbeing of residents by X2, (24, N=335), P<05.

This implied there exists a statistically significant relationship between bodaboda business and Road Safety and Socio-Economic Wellbeing of residents of Turkana Central sub- County. Further, these findings hold the true reflections of bodaboda business is mushrooming in Kenya, thus it's a positive indicator to a socio-economic development in Turkana County.Finally, the study concluded that there are stakeholders that are supporting project interventions that seek to promote *bodaboda* socioeconomic wellbeing in their area,59.5% of the bodaboda riders indicated County Government through their policy regulations as stakeholders, 20.8% indicated private sector like SACOs as stakeholders, 8.9% indicated National Government through their legal framework as stakeholders, 6.0% indicated NGOs as stakeholders, and 8.8% of them indicated none as stakeholders. The study recommends that; Stakeholders in the bodaboda sector should set up rules and regulations to minimize the nature of bodaboda rider's patterns of traffic behaviour that affect the Road Safety socio-economic wellbeing, *Bodaboda* riders should be educated on the negative impacts of their behaviors and how they affect household wellbeing, Bodaboda riders should be encouraged to venture into other development activities as a way of increasing their income, and Stakeholders should be sensitized on the importance of promoting bodaboda socioeconomic wellbeing.

Key Words: Bodaboda Riders' behavior, Residents, Road Safety, Socio-Economic, Wellbeing

Introduction

The *bodaboda* transport has become a booming business because of the monetary gains for the unemployed youths in Kenya. In all towns and rural areas, you will find these motorcycle riders ferrying passengers and

all manner of goods, ranging from farm produce, animals, hardware materials, households among others. With the immediate monetary returns and affordability especially where people can be advanced loans or even sell property, majority of the rural people have embraced this mode of transport as easier, convenient and affordable solution to their livelihoods (Kumar, 2011).*Bodaboda* motorbikes, which serve as the most basic mode of individual transportation in most African nations, play a significant role in transportation (Okebiro et al., 2022). A prominent method of transportation in Kenya's rural regions and urban sprawls, 'boda bodas' are two-wheeled commercial motorbikes that move both people and cargo from one location to another. They have especially been entrenched in the Kenyan transport infrastructure aside from serving as a source of employment and livelihood to many youths (Pesacheck, 2021). However, this type of vehicle poses serious problems in terms of Road Safety. Statistics shows 1,075 people died from *boda boda* accidents in 2020, 301pillion passengers and 774 motorcyclists (Pesacheck, 2021).

The Kenya National Bureau of Statistics (KNBS) Economic Survey 2021 revealed that accidents increased in 2020 even as Kenyans were working from home and moving less during night curfews. According to Ndege (2021) the number of accidents on Kenyan roads rose 24.2 percent to 8,919 in 2020 even as the government put restrictions such as curfews and a ban on inter-county movements to curb the spread of Covid-19. This is due to the fact that drivers who stayed on the roads engaged in risky behaviour such as speeding and drunk driving which made the roads deadly. Road users especially rushed to beat curfew in major urban Centers, which could have resulted in accidents (Ndege,2021).This means families are losing breadwinners with others incurring high medical bills for recuperating riders and pillion passengers who suffer injuries as a result of cycle-related accidents as most *bodaboda* riders lack third party insurance (Business Daily,2020). According to past and current studies, as well as multiple research initiatives, a startling 46 percent of traffic deaths occur to vulnerable road users, such as pedestrians, cyclists, and motorcycle riders, as well as their passengers (World Health Organization, 2018). The increasing popularity of motorized two- and three-wheel vehicles, have previously been connected to an increased risk of accidents (Diaz Olvera et al., 2019) and an increased risk of death (D. Wang et al., 2019). Therefore the *bodaboda* business has no sufficient legal framework for regulating the behaviors of the *bodaboda* riders in the transport industry (Okebiro et al, 2022). Attempts by local governments to regulate them have failed (Howe & Davis, 2002). According to Goodfellow and Titeca, because of the large number of Bodaboda riders and the service they provide, it has proven difficult to regulate their activities (2012).Okebiro et al.,(2022) observes that when *bodaboda* riders go on strike, urban transportation is thrown into disarray since they are relied upon by such a large proportion of the city's population. Furthermore, the rural areas are disconnected since *bodabodas*, can maneuver through traffic swiftly and take people directly to their destinations. One of these factors is the privatization of the transportation industry. While the services provided by the *bodaboda* market have become more essential, little research has been conducted on the influence of risky *bodaboda* riders' behavior on Road Safety and socioeconomic well-being among town people throughout the globe. This has led to gang like behavior which as result affects their livelihoods and economic growth. This has raised issues on the behavior of youths participating in the *bodaboda* business, because of unemployment and reasons of engaging in the business (Okebiro et al., 2022). The *bodaboda* industry has easy entry and lack proper regulated policy and has led to specific patterns of behavior among *bodaboda* riders in Kenya. For example, operating in a gang like behavior, unruly, self-unregulated behavior and participating in community mobilization; all of which have an implication on bringing to families to the tore accidents resulting into incapacitation, and sometimes loss of lives (Okebiro et al., 2022). According to Motorcycle Assembly Association of Kenya (MAAK), the motorcycle business in the country is generating income of shillings 400 million daily and cannot be wished away. Therefore, the need for a *bodaboda* specific policy that focuses on increasing transportation access and employment chances of youths and families to address issues of unemployment and poverty in Turkana County.

Motorbikes are the most common form of motorized transportation in the world (Okebiro, 2022). Some of the most well-known nations in the world where motorcycles are often used as a method of transportation

are Thailand, Indonesia, Cambodia, Nigeria, Uganda, Ghana, and Cameroon (Odera, 2015). In many medium and low-income nations, where motorbikes are becoming more and more widespread as a mode of transportation, a significant number of individuals wounded or killed in traffic accidents are motorcycle riders. Motorcycle accidents, in addition to car accidents, are on the rise in many nations. In Uganda, according to the 2021 Annual Crime and Traffic/Road Safety report 4,159 road accident fatalities countrywide were recorded, of these 1,390 involved motorcycle riders while 528 were passengers on motorcycles. This translates to about four people dying from *boda boda* accidents every day and about 116 every month.

This means Motorcycles have become a menace on the road, when five accidents are registered a day, four involve motorcycles (Maloba, 2022). This has put the attention on motorcycle-related accidents on the roads (WHO, 2013). Abdelfatah (2016) observes "At the risk of stating the obvious, this degree of traffic-related carnage engenders high costs far beyond the human toll". In 2009, for example, the Malaysian government spent RM 9.3 billion as a result of traffic accidents (Hamdan and Daud, 2014).

According to Okebiro et al., (2022) the evolution of motorcycle taxis in Africa can be linked to inadequate and poorly developed public transport systems, market liberalization and urbanization factors. In urban areas, the inability of transport systems to meet the demand for urban commuters led to the acceptance of motorcycles in many African cities as an alternative means of transport to resolve commuting problems (Adesanya, 1998). Consequently, the two-wheelers are becoming a key mode of transport in urban and rural areas. South Africa, Tanzania, and Nigeria are among the greatest motorcycle marketplaces, followed by Algeria, Kenya, Egypt, Uganda, Ethiopia, Morocco, and Angola (Okebiro et al., 2022).

According to Kagwiria (2017), globally the number of youth unemployment increased to 7.6 with youth-adult employment ratio remaining almost constant at 2.8 (United Nations Department of Economic, United Nations and Department of Public Information, 2009). According to the report on unemployment, the rate in Sub-Saharan Africa eased marginally from an average of 8.1 to 7.9 in 1998 to 2008 respectively with the youth bearing a relatively large burden of unemployment (Kagwiria, 2017). Kagwiria notes that "according to world Bank group 2016 in Kenya, youth unemployed stood at 17.4 percent in 2014 from 17.1 percent in 2011". In Turkana County, particularly in Lodwar the headquarters, unemployment is a major challenge facing youths. Even those who have education and skills find that the jobs and careers to which they aspire for are largely not available. The employment situation is demoralizing and can lead to disaffection, and sometimes to drug or alcohol abuse. It can also render youth vulnerable to manipulation by politicians and those that want to incite violence (Marttens, 2017). According to Marttens (2017), evidence suggests that the livelihoods and savings groups referred to above act as a mechanism for improving economic opportunity and reward for young people.

However, they are in need of strengthening as events such as drought or price fluctuations weaken their ability to provide opportunities and insulate youth from shocks. In addition, and in the context of structural labour market deficiencies, such groups are not sufficient by themselves to improve youths' prospects: multi-pronged action by actors with greater influence is required to create economic opportunities for youth. Therefore, the large number of unemployed and underemployed university graduates has had a major influence on the bodaboda business, which has provided them with a means of subsistence and a steady source of revenue for many years now (Rugut 2015). However, despite their high-risk conduct, the vast majority of *bodabodas* are young operators who join the motorcycle transportation industry in order to get a temporary employment. Unemployed youths have taken advantage of insufficient road infrastructure and scarcity of vehicles to earn a daily salary by transporting people and goods in *bodabodas,* which are motorcycle taxis (Nyaga, 2017). According to Nyakundi's (2017) study on poverty eradication via boda boda motorbikes as an emerging business for Kenyan poor, riders and owners of motorcycles in the transport sector in Kenya earn between 500 and 1500 shillings per day at the end of the day. Further, the

study revealed that the business not only assists the owner and the rider but also becomes a source of poverty eradication at the grassroots (Nyakundi 2017).

The study seeks to address the influence of risky *bodaboda* rider's behaviour on Road Safety socio-economic wellbeing and development among Lodwar town residents in Turkana County, Kenya. The *bodaboda* motorcycle transport is becoming popular in both rural and urban areas because of its nature of operation of using paths where there are no passable roads. According to Nyaga (2017), the role of transport sector in Kenya is significantly demanding while at the same time being complex. The emergence of the *bodaboda* motor cycles business in transport industry offered a solution to some of the problems and challenges people faced in linking the rural and urban areas for required services faster and more convenient (Starkey, 2016). The *bodaboda* transport has become booming business because of the monetary gains for the unemployed youths in Kenya. With the immediate monetary returns and affordability especially where people can be advanced loans or even sell property, majority of the rural people have embraced this mode of transport as easier and affordable solution to their livelihoods (Kumar, 2011). Data show that boda boda accidents are responsible for 13.50 percent of all traffic-related fatalities in Kenya (NTSA, 2014). The rise in motorcycle-related accidents and deaths is attributed, in part, to the ease with which new entrants can enter the *boda boda* industry. According to the National Transportation and Safety Authority's 2016 report, the number of accidents using *bodaboda* motorcycles has grown. Comparatively, in 2014 there were 320 vehicles compared to 399 in 2016, while in 2015 there were 159 pillion passengers as opposed to 160 in 2016. (KNBS, 2016).

Bodaboda serve passengers in areas where other modes of transport may not be available (Ministry of Transport, 2009),that is why it is a common transport mode in the Arid and Semi-arid areas(ASALs). The *bodaboda* serve as taxis and provide convenience of travelling irrespective of time, type of road, distance or destination and in addition they are readily available. The *boda boda* are increasing transportation access and employment chances for the youths and income generation for the households and addressed issues of unemployment and poverty, leading to socio-economic development in Turkana County. However, *bodaboda* transport industry has all the advantages notwithstanding, the safety of the *bodaboda* motorcycle rider and pillion has become a major concern to stakeholders including the government and non-governmental organizations (NGOs) concerned with interventions and transport safety. This is due to increase in daily road accidents daily involving the *bodaboda* riders and pillions (Okebiro, 2022). This death toll from motorcycle *bodaboda* riders has been so high that some hospital wards are set aside specifically for *bodaboda* causalities (Bogan, 2010). Okebiro (2022) opines this has social and economic ramifications, which include, a drain on the economy through loss of income for riders who are maimed, loss of labour in the county, loss of support for households especially if the breadwinner dies or is incapacitated and loss of time for other activities because of caring for the injured. Similarly, for those injured in accidents, the treatment is long and expensive since most of them sustain head and injuries, not to mention the emotional pain for relatives in the case death (Khayesi, 1999).

It is against these challenges of *bodaboda* transport industry that, the study was undertaken to determine the strategies to be used to regulate the *bodaboda* transport industry and suggest ways to alleviate to youth's unemployment and their livelihoods and Road Safety socio-economic wellbeing of Lodwar town residents in Turkana County, Kenya.

Statement of the problem

In all towns and rural areas, you will see the *bodaboda* riders ferrying passengers and all manner of goods, ranging from farm produce, animals, hardware materials, households among others. Therefore, *Bodaboda* industry has become one of the lucrative sectors in the country and most of the youths have taken it as a business for their livelihoods (Okebiro et al., 2022). Despite this, there is inadequate literature on how *bodaboda* rider's traffic behaviour has influenced their social-economic wellbeing. The increase in the

number of *bodaboda* motorcycle accidents has been reported in many parts of the country (KNBS, 2016; Singoro et al, 2016). Statistics from the National Police Service indicate that 1,270 people died of motorcycle accidents in 2021; 1,136 people died in 2020; 728 in 2019 and 591 in 2018. In 2022 alone, 251 people died from *bodaboda*-related accidents (Kangethe, 2022). According to Kangethe (2022), Currently, Kenya has one of the world's highest rates of road-related deaths, with 26.6 deaths per 100,000 people, which is likely to increase as it is believed that by 2030, road traffic accidents will account for more deaths than AIDS in low- and middle-income countries. These accidents have adverse effects not only on the riders, passengers, families, and other road users (Nyaga, 2017), but also among residents in urban communities. Road traffic accidents constitute a significant health and development problem in Kenya. *Bodabodas* are silent killers, and they contribute to half of the road accidents in the country. Dedicated wards for *bodaboda* victims are becoming a standard feature in hospitals for example the Mathare Korogocho Hospital in Nairobi, Kenya (Kangethe, 2022). Kangethe observes that the severity and delicateness of these injuries demand complicated and costly care. The fact that most *bodaboda* riders are not insured makes hospital bill payment very costly, driving many people into poverty. In every 5 Kenyans, 4 of them do not have medical insurance (Kangethe, 2022).According to Okebiro et al., (2022) posits that the dynamics of this business have not been adequately studied to establish the prerequisites for its success as a business venture for the youths. Because many youths enter the business with aspirations of being economically and socially empowered but they get involved in fatal accidents which incapacitate them and push them off the business (Okebiro et al, 2022). One key factor related to Road Safety is the rider's age (Nasongo, 2015). Available literature showed that adolescents and young adults frequently got involved in accidents compared to other age-group categories (Beenstock & Gafni, 2000).Young drivers / riders tend to take risk behaviors while on the roads (Vasconcellos 1990; Zhang, Frazer, Lindsay &Mao, 1998). Riding behavior plays a crucial role in maintaining the Road Safety measure and prevention of road traffic accidents. In a more recent study, Zou and Sun (2013) considered the characteristics of traffic accidents in some parts of China and found that the drivers' behavior was the most significant factor affecting traffic accidents. More specifically, they indicated that the speeding and driving in wrong lanes caused the majority of traffic accidents. Developed countries show some similar patterns. Driver behavior has also been listed as one of the major reasons for traffic accidents in Norway (Iversen and Rundmo, 2004). It is clear that rider behaviour is what the rider chooses to do with knowledge, skill, perceptual and cognitive abilities, have while riding. The ability to judge speed, and the capability to control the vehicle at that speed, are aspects of driving behaviour (Msese, 2015). Forward (2006) observes that "skills will be turned into safety only when a proper set of underpinning beliefs and perceptions is provided for behaviour." It's on this basis this study focuses on the influence of *bodaboda* riders' behaviour on socio-economic wellbeing among Lodwar town residents in Turkana County, Kenya. And will specifically interrogate the nature, effects, projects initiated by bodaboda riders and interventions on the problem.

Purpose of the Study

The purpose is to explore the *bodaboda* rider's behaviour on Road Safety socio-economic wellbeing of Lodwar town residents in Turkana County, Kenya**.** The study is justified because *Bodaboda* business is an emerging means of transport and revolutionizing the sector and assisting youths for earning daily income and empowerment leading to socio-economic wellbeing and development. It attracts the unemployed youths for easy entry, making it a livelihood. It too attracts many people to use in both rural and urban areas because it is considered to be the cheapest and most convenient mode of transport to connect rural-urban communities, in Lodwar town where vehicles cannot because of impassible road network.

Significance of the Study

Due to the worrying rising number of death statistics, *bodaboda* is an essential sector that requires concrete reforms. The industry is run by youths, who contribute 76 per cent of the country's population; Over 60 per

cent of the riders are below 35 years (Maloba, 2022). The youth form 60 % of the total population in Kenya and most of them are unemployed though educated and ripe for formal employment in the public sector. Therefore, because of unemployment, they are left to hustle in the informal sector and to make livelihoods through *bodaboda* transport industry; utilizing a youth livelihood framework which helps to understand how young people make meaning of themselves and opportunities in Turkana County, Kenya in extreme socio-economic conditions (Okebiro et al., 2022). This study therefore, explored the strategies to be put in place for successful operation and implementation so that to minimize the rate of deaths caused by *bodaboda* rider's traffic behaviour. The findings were from Turkana County as a sample study but will be applicable in other counties nationally and other countries internationally. This study was relevant on the fact that it will reflect on clear situation of transport in a town in Arid and Semi-Arid area (ASAL) to the sedentary lands where *bodaboda* are used to ferry farm produce, inputs and harvest from farms. Therefore, the study was of significant importance to traffic police apply in law enforcement and regulation. With the regulation of *bodaboda* transport sector, chances will be that improved safety behaviours were experienced by *bodaboda* riders as well as their passengers, for example wearing helmets by the passengers. Too, the government through National Transport and Safety Authority (NATSA) will apply the findings to regulate the business dynamics of *bodaboda* transport industry for enhancing its success on Road Safety socio-economic wellbeing of Lodwar town residents, Turkana County, Kenya (Okebiro et al., 2022).

The Objectives of the Study

To evaluate the interventions employed by stakeholders on *bodaboda* riders behaviour on Road Safety of Lodwar town residents in Turkana County, Kenya.

Research Questions

What are the interventions employed by stakeholders to change *bodaboda* riders traffic behaviour in Turkana County, Kenya?

Assumptions of the Study

It is assumed the findings from the study made the *bodaboda* motorcycle riders become compliant with the traffic rules and stop gang like behaviour, and reduce the number of accidents caused in *bodaboda* transport industry. It is further assumed that the passengers are given helmets and reflector jackets to wear for safety compliance measures.

Scope of the Study

The study was carried out in Lodwar town in Turkana County, and focused on *bodaboda* rider's behaviour on Road Safety socio-economic wellbeing of Lodwar town residents. Research sites included Kanmkemer, Nakwamekwi, Nawotrong, Napetet, Johansburg and Soweto.The target population consisted of the *bodaboda* riders operating in and linking the estates in Lodwar town in Turkana County. The key informants included: Traffic police officers, court officers, sales companies, hospital administrators. The study was also limit itself into the responses from the male riders only and therefore female riders, passengers and other road users were not be interviewed(Okebiro et al.,2022).

Limitations of the Study

The limitations of the study were based in Turkana County and being ASALs region, were affected by unfavorable weather conditions to both the researcher and respondents. Further, the study was limited to the study of Road Safety socio-economic wellbeing and development of youth riders and their households and excludes the passenger's traffic behaviour. The study was too limited in accessing accident records at the

traffic police office which posed as a challenge; given the nature of police work of keeping information confidential. The other challenge included inaccurate statistics of the actual number of accidents as there are reported and unreported cases of *bodaboda* accidents in rural areas where the traffic police office cannot reach and trace.

Conceptual Framework

The conceptual framework was guided by a wide range of theoretical approaches which relates and focuses on the study. Thus a theory provides the researcher with the lens to view the world (Royle and Hal, 2013). The research was guided by structural-change theory, Dual-sector Model. The theory was propounded by W. Arthur Lewis and Hollis B. Chenery and his coauthors (Todaro and Smith, 2015). The "Dual-Sector Model" is a theory of development in which surplus of labour from traditional agricultural sector is transferred to the modern industrial sector whose growth over time absorbs the surplus labour, promotes industrialization and stimulates socio-economic development (Todaro& Smith,2015). It explains the growth of a developing economy in terms of labour transition between sectors, the capitalist sector and the subsistence sector. Lewis, the proponent of the theory, defined the capitalist sector as "that part of the economy which uses reproducible capital and pays capitalists thereof". Subsistence economy is which consumes production and pays labourer, for instance pastoralism in ASALs (Okebiro et al, 2022).

According to Okebiro et al (2022) the use of capital is controlled by the capitalists (the *bodaboda* owners), who hire services of labour from *bodaboda* riders. In this sense the *bodaboda* transport industry is the capitalist sector and the youth livelihoods are subsistence sector which is affected by the accidents (Okebiro et al, 2022). Lewis defined subsistence sector as "that part of economy which is not using reproducible capital" for example the pastoralist in Turkana County. This can be referred to as "self-employed sector "where the *bodaboda* riders are employed for the purpose of making a livelihood and contributing towards socio-economic development in the society. The research employed this theory in conceptual framework because of the following assumptions: it is presumptively assumed that the expansion of output in the *bodaboda* transportation sector is the root cause of both labor transfer and employment growth in the current sector. Regarding the rate of expansion, it is believed that the participation of *bodaboda* riders within Lodwar town, located in the Turkana County in Kenya, is a sign of industrial investment and capital accumulation in the current sector (Okebiro et al., 2022). It further assumed, the *bodaboda* transportation business assumes that the riders' or owners' profits were re-invested in the business by purchasing *bodaboda* motorcycles and operating to improve Road Safety and socioeconomic well-being for residents of Lodwar town in Turkana county, Kenya (Todaro & Smith, 2015).

Many scientific and academic researches employ a conceptual framework at the outset because it helps the researcher to clarify their research objectives and questions through a simplified manner (Okebiro et al., 2022). In this sense Orodho (2009), argues that a conceptual framework describes the relationship between the research variables. Thus, according to Everitt (2002), a dependent is a variable dependent on another variable like the independent variable. In this study therefore, the dependent variable were resident's Road Safety socio-economic wellbeing while independent variable will be *bodaboda* rider's behaviour and intervening variables will be the government policies to regulate the emerging *bodaboda* motorcycle business in the transport industry for Road Safety socio-economic wellbeing of residents, sustainable development and economic growth in Turkana County, Kenya (Okebiro et al., 2022). To attain a decent level of economic well-being that can be sustained permanently, the major objective of sustainable development is to reduce poverty and inequality (Goodland and Ledoc, 1987). Figure 1 illustrates the conceptual frame as linked with the structural change theory adopted for the study.

Figure1 illustrate the conceptual framework which simplifies the variables and gives a clear statement of the problem. The independent variable is classified according to objectives of the study such that to evaluate the interventions employed by stakeholders influence risky *bodaboda* behaviour on Road Safety socio-

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economic wellbeing of Lodwar town residents in Turkana County, Kenya. The various variables leading to dependent variable of Road Safety and Socio-economic wellbeing of residents were classified into two kinds including one positive aspects of Savings by the *bodaboda* riders; and investments of the *bodaboda* riders; self-employment of *bodaboda* riders in the transport industry; *Bodaboda* riders acquiring fixed assets such as land and building residential house for renting and establishment of *Bodaboda* Saving and Credit Cooperative Society (SACCOs) enabling acquire loans. Two, the negative aspects of dependent variable include: Injuries-for both the rider and their customers/passengers; Accidents-leading fatal and loss of lives; Loss of assets-the *bodaboda* motorcycle. The moderating variable included interventions from: National Government legal framework; county government *Bodaboda* policy, Youth development fund; Youth insurance fund; *Bodaboda* insurance cover; *Bodaboda* SACCOs for provision of security and protection and Non-Governmental organizations.

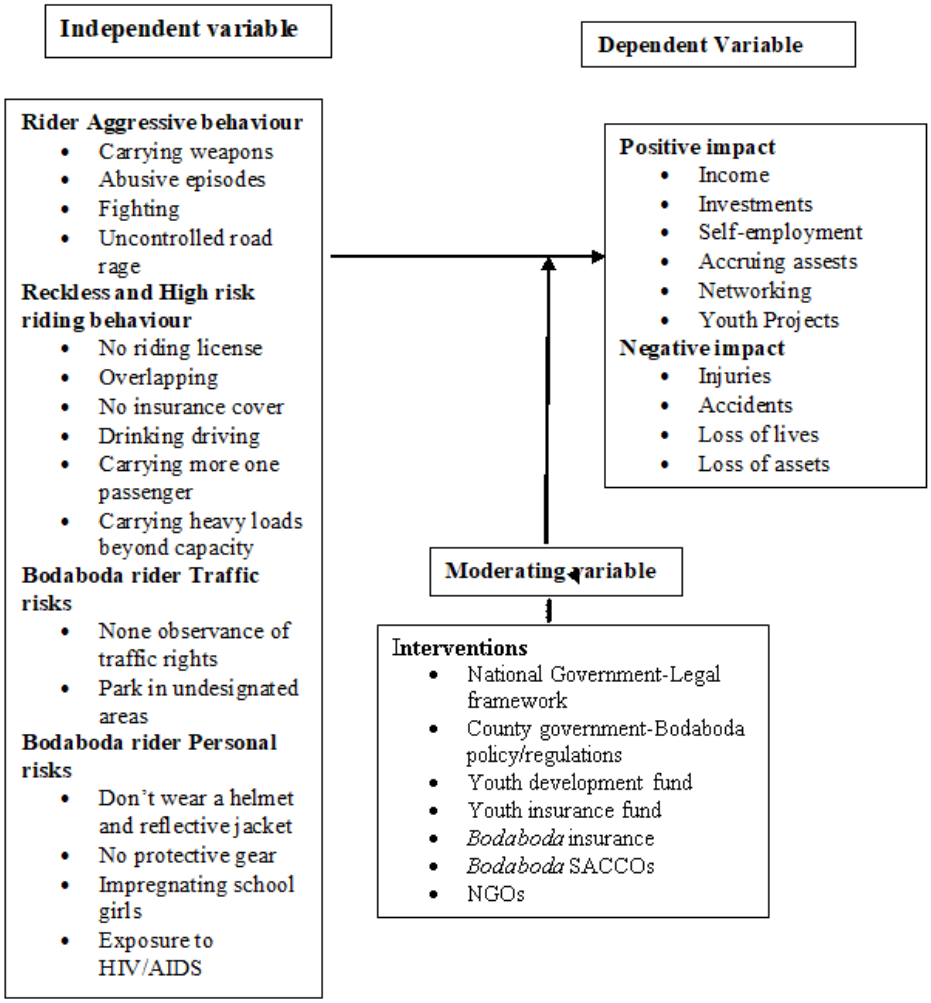

Figure 1.1: Conceptual Framework (Source: Okebiro, et al.2022)

The study examined the *Bodaboda* Rider's behaviour on Road Safety socio-economic wellbeing of Lodwar town residents inTurkana County, Kenya.

The discourse of participation of youths in *bodaboda* led to several studies done by research scholars making concerted attempts to link participation and beneficial outcomes in the youths who participate in *bodaboda* business as illustrated in figure 1. The study used constructivism that believes that reality is constructed and there can be multiple realities of the same situation depending on the lenses used to interpret (Okebiro et al., 2022). Creswell (2009) states that complex views and ideas can signify varied meanings which are more likely to provide accurate responses for people's situation through broad and open-ended

questions in discussions. Roller and Lavrakas (2005) observe that constructivist paradigm explains social realities and sophisticated perspectives through social relationships, subjective meanings and sources of knowledge which are embedded in a particular society. Furthermore, as Kelily (2007) observed "social constructivism can effectively examine the beliefs, ideas and images of young people". Therefore, in order to explore a real-life setting of youths involved in *bodaboda* business in Turkana Central Sub- County, this philosophical perspective renders itself as the appropriate choice for this study. Constructive analysis, like that done in Turkana County, does not specify dependent and independent variables but instead concentrates on the whole complexities of human sense-making as the situation develops (Kaplan &Maxwell, 1994).

Definition of Operational terms

Accidents-in this study refer to unfortunate incident that happens unexpectedly and unintentionally, typically resulting into damage or injury or death.

Bodaboda accidents– in this study refer to unfortunate incidents that happen unexpectedly and unintentionally, as a result of *bodaboda,* leading to damage of motorcycle, or injury or death of those involved.

Bodaboda- in this study refer to a two or three wheeled motorcycles used for transporting goods and passengers at a fee from one destination in urban and rural areas.

Bodaboda safety-in this study refer to all aspects that applied to reduce the vulnerability to accidents when riding the *bodaboda,* involving motorcycle design, rider training, skills and knowledge and riders behavior and attitudes leading to increase or decrease of *bodaboda* accidents.

Bodaboda rider– in this study refers to the operator of the *bodaboda* motorcycle.

Development-in this study refer to a process that brings about overall improvements in socio-economic well-being of people who are in need of it.

Economic Development-in this study refers to the economic wealth of Turkana County, for example the standard of living of all or most of the population.

Good condition of bodaboda-in this study it implies a *bodaboda* in good working order for transporting passengers and goods which have reflectors, side mirrors, passenger seats, effective brakes, good tires and well serviced.

Households– in this study refer to all members of the rider's family and dependents for the extended families.

Livelihoods-in this study refers to the means or source of income for daily survival in the household.

Pillion-in this study refers to *bodaboda* passengers.

Policies- in this study refer to overall directives which will outline guides or sets a context for proposed actions a county government will take.

Risky behaviour-in this study refers to a characteristic displayed by the *bodaboda* riders which endanger the life of both the rider and the passenger.

Rider behaviour– in this study is what the rider chooses to do with knowledge, skill, perceptual and cognitive abilities, to judge speed, and the capability to control the *bodaboda* while riding.

Road Safety-in this study refers to all activities or methods and measures that are issued to reduce risks of injury, death and ham to road users thereby decreasing the repercussions and rates of road crashes in transport industry.

Socio-economic development-in this study refers to a process of social and economic development in Turkana County.

Social development– in this study refers to improvements and investments in *bodaboda* transport needed especially in education and health support among vibrant Turkana families.

Traffic– in this study refers to the movement of *bodaboda* motorcycles with goods or passengers in an area along the street, paths or roads.

Traffic-behaviour-in this study refers to a risk displayed among *bodaboda* riders riding on the highways.

Wellbeing-in this study refers to steady social, economic, health and welfare of residents in Lodwar town

Review of related Literature

The literature review is formed by the objective on Interventions by Stakeholders on Road Safety Socio-economic Wellbeing of Residents.

Road Safety knowledge has improved substantially over recent decades, but it is still a relatively new science. The evidence based on effective Road Safety interventions is growing, with new information being added on a regular basis (GRSF, 2021). A study by GRSF, (2021) results shows some interventions are known to be highly effective at reducing fatal and serious crash outcomes when implemented correctly. However, the same interventions may produce only limited benefits when applied in the wrong way. Other interventions are of limited benefit regardless of how they are applied, while a small numbers have been proven to be harmful. Ineffective interventions have been adopted and are still being applied for a variety of reasons. These include the mistaken belief that they will work based on “common sense” assumptions, ease of application, political acceptance, low cost, and popularity. In some cases, there is poor research evidence which provides misleading results. Several studies have recommended interventions to improve traffic safety on road networks (GRSF, 2021).

In global perspective, in China, studies done by Zhao (2006; 2009) suggested allocating more funds for the development of the transportation infrastructure. He also indicated that such development will have a significant impact on both traffic safety and the national Gross Domestic Product (GDP). by Knapp (2000) study suggested the use of traffic-calming measures as a tool to reduce traffic accidents. Three types of speed control measure categories were considered, including speed humps (vertical control), forcing drivers to change their direction (horizontal control), and reducing the space available for vehicles via extending the curbs (narrowing). An effort to facilitate accident analyses in Malaysia, Liang et al. (2003) developed a Geographic Information System (GIS) method for analyzing traffic accident data. A study done by Bhagyaiah and Shrinagesh (2014) suggested the use of GIS and considered a case study in India. Schelin (2007) findings advocated for the use of Intelligent Transportation Systems (ITS) improving traffic safety in Malaysia.

In Africa, especially in Uganda, KCCA has planned to streamline the *bodaboda* industry through a number

of efforts that include registration of *bodaboda* riders in city, training of riders, issuing operational permits, supply reflector jackets and helmets, gusseting stages and introduction of wardens, among others. Out of these proposed interventions, and considered two options: (i) supply of reflector jackets and helmets and (ii) training. This is because these interventions are directly related to reducing accidents and leading to Road Safety on the users. The level of severity of physical injuries sustained necessitates helmet use by *bodaboda* riders. The results depict that the number of *bodaboda* riders who had helmets reported less severe injuries (Sebaggala et al, 2014). Given the vital role of transportation in economic and social development, all nations worldwide invest in transport infrastructure and undertake interventions to strengthen transport service systems (Afolabi and Gbadamosi, 2017). Therefore, access to jobs in transport sector is essential to overcoming inequality and reducing poverty. People who cannot access productive work are unable to generate an income sufficient to cover their basic needs and those of their families, or to accumulate savings to protect their households from the vicissitudes of the economy (KNBS and SID, 2013). According to KNBS and SID, (2013), the unemployed are therefore among the most vulnerable in society and are prone to poverty. Levels and patterns of employment and wages are also significant in determining degrees of poverty and inequality. Macroeconomic policy needs to emphasize the need for increasing regular good quality 'work for pay' that is covered by basic labour protection. Despite the fact that agriculture is considered the 'backbone' of the economies of East Africa, the quotidian rhetoric of politicians and policy makers, yet the stark reality is that the contribution of this sector to GDP is slipping, overtaken by the service industry (SID, 2015), especially transport and particularly *boda boda* transport industry. Even though agriculture contributes 25 per cent directly and 27 percent indirectly to the country's Gross Domestic Product (GDP), the budget allocation to the sector remains at only 5 percent of the total expenditure (GOK, 2013). As such, the sector fails to attract and retain skilled human capital capable of driving profitability and sustainability and most of the youths are educated to live in *Maisha ngumu* (hard life) in the rural areas (Mwaura, 2017).

Motorcycle businesses have become popular choice of many basic modes of transport (Lombard and Ninot, 2010) and attract many youths who have completed their education in any level. Globally in Indonesia, motorcycle taxis has been boosted by the invention of apps which has increased daily trips leading to increased earnings (Phun et al., 2018). Keino et al. (2020) connoted "A motorcyclist in Indonesia shared that he earned 10 times more from the motorcycle taxi business than the construction job he did before" (Kurdaningsih, Sudargo,and Lusmilasari,2017).

Many young men in most town Centres described their days as 'hustling' for work or 'brokering'. Among the girls, the situation is different. Very few are found hanging out in the town Centres. Most of them said they were able to find casual work, running small businesses such as selling vegetables or *miraa*, or helping the family business in some way, and then most get married and begin running a household (Scott-Villiers., et al,2015). A small number of youths were earning a living through riding *bodaboda* (motorcycle taxis) and had to struggle to make any money in the face of constant harassment from police and increasing competition from other youths. Virtually none of the classmates had gone back to pastoralism or other rural work (Scott-Villiers., *et al*, 2015). Therefore, youths are generally attracted to *bodaboda* transport sector in ASALS areas which are considered by them as easy to enter and make some livelihoods instead of pastoralism. It lacks proper regulated policy and because of this, it has resulted into a specific pattern of behavior among the *bodaboda* riders. That is why recently the *bodaboda* business has been recognized as one of the industries that has a significant effect on the economic growth and sustainable development of a nation.

Most *bodaboda* taxis provide rural employment for young men (most, or all, riders are men), the ability to earn a living through riding is an exciting and high status, particularly as there may be few other operations (Kemtsop and Starkey, 2013). Kimtsop and Starkey (2013) noted "the motorcycle *bodaboda* taxi work can be flexible, allowing other income-generating activities. For example, in a survey done in Cameroon, some

rural motorcycle *bodaboda* taxi riders who were farmers, did not do transportation work daily, but gained significant additional income by helping to meet the large transport demand related to the weekly market". Since there is high unemployment rate of youths in Kenya, Nyachieo, (2015) argues that *bodaboda* riders engage in the business leading to accident causing behaviour in the process of trying to make a living in a tough environment. This is because riders belong to a certain social category based on their relation to the means of production. They may not be adequately prepared in skills (trained to ride) to do their work leading to road because they cannot afford to pay for the formal training. They therefore must work hard to find a way to get the daily remittances that must be given to motorcycle owners, who could still be servicing their motorcycle (*bodaboda*) loans. In addition, riders may not adhere to traffic rules and regulations if by adhering to them they cannot make enough money to make ends meet (Nyachieo, 2015). They may therefore, be motivated to engage in risky riding behaviour (over speeding, overloading, wrong overtaking).

The *bodaboda* transport industry can be referred to us side-hustling for understanding youth livelihoods in contemporary society. A side-hustling industry is important because it allows showing what educated youth do when facing uncertainties about employment (Mwaura, 2017). Also, side-hustles illuminate how aspirations of educated youth change when they anticipate or face livelihood uncertainties, and how they develop diversified career trajectories that potentially enable them to attain the desired social markers of adulthood, while also avoiding the stigma of being "unemployed youth" (Prince,2013). Side-hustling is not hustling, Hustling has been described as everyday survival strategies of marginalized young people to capitalize on every opportunity to earn an income or generate symbolic capital in extreme economic landscapes (Munive, 2010; Thieme, 2013), for example *bodaboda* riders' behaviour, Lodwar town in Turkana County. What was once seen as a denigrated occupation, and not a first choice, has become desirable because it allows investing in oneself and starting up something on one's own (Langevang and Gough, 2012). Therefore, significant role of transport, lead to the growth of *bodaboda* business as an alternative means of transport to link rural and urban areas. There is no development without transport services. Okebiro (2016) argues that motorcycle business known as *"Bodaboda"* eased transportation problem of connecting urban and rural areas in Kenya, and a source of employment for youths or self-employment after graduation from higher institutions of learning. Motorcycle are also affordable to common man and can easily reach the inaccessible parts through narrow and poorly paved roads (SA and MM,2018).Similarly, motorcycles are cheaper to maintain than motor vehicles because the former have smaller engines and therefore, have better fuel economy, and their parts are more affordable (Almeida et al.2016).

To ensure transport sector effectively and efficiently achieve its intended functions, the former Minister for Transport, Honorable John Njoroge Michuki, launched the National Transport Policy Committee (NTPC) on 2nd April 2003 with the view of developing Integrated National Transport Policy (INTP) intervention. Public participation was envisioned through consultation with various stakeholders with the objective of attaining solutions to existing transport related problems based on the best international practices (Ministry of Transport, 2009).

This Integrated National Transport Policy (INTP) document was developed under the theme of "moving a working nation (KIPPRA, 2009). It played a very significant role in establishing the challenges that prevailed within the transport sector and which adversely affected the wellbeing of both rural and urban areas. Policies that exist however, have not taken into considerations the impact of motorcycle in improving rural and urban socio-economic well-being. The government ensured that the policy which was developed came up with strategies that could link up the Kenyan hinterlands with the rest of the developed parts of the country. Nevertheless, all these communication or movement of goods and services as well as people in and from these areas are critical to the growth of the national economy as well as social amenities such as schools and hospitals which remained a nightmare in these areas (KIPPRA' 2009). Poor roads network isolated these hinterlands from the rest of the world and as a result, there has been increase in mortality rate

due to patients who are not able to access health services at the right time (Starkey, 2006).

Findings from various studies done indicate young people have been attracted to *bodaboda* taxi business even without the necessary basic training which has also turned to be recipe to many accidents as well as violation of traffic rules (Nyachieo,2012). Chitere (2006) and Moraa (2010) found out that even with the existence of the registered commercial driving schools not much is made by the state agencies to regulate them. Also in the study conducted in Thika it was established that majority of the riders indicated that they had attended informal training (Mbugua, 2011). At the same time, increase in the number of motorcycle accidents has been reported in many parts of the country according to police reports (KNBS, 2016). These accidents have adverse effects on the riders and the pillion passengers as well as other road users. The findings of the study done by Mbugua (2011) indicate most of the victims are poor people with no medical cover, accident cover insurances. This ends up in the depletion of the already scarce resources at their disposal.

The interventions by the government through the Traffic Act CAP 403 of 2009 provide instances when motorcyclist's accident constitutes crimes. These include: careless riding, riding without due care and attention, dangerous riding, changing lanes when it is not clear to do so, pulling out when it's unsafe to do so, not taking precautions in line with road and weather conditions, riding through a red light, entering a roundabout when it is not clear to do so, riding too close to the car in front, among others. Further, the Traffic Act has various requirements for motorcyclists including making it an offence to ride a motorcycle without a helmet and jacket that has reflectors. The Act provides for the provision of a jacket and helmet with reflectors to be worn by a motorcycle passenger. It requires the motorcycle to be insured against third party risks in accordance with the Motor Vehicle (Third Party) Insurance Act. It also requires a rider to have a valid driving license. Many *bodaboda* operators disregard or do not meet these requirements.

Kenya looks to the future with the aim of consolidating, enhancing and sustaining the gains of the Economic Recovery (Strategy ERS) which encompasses wealth creation as well as employment opportunities to the youths. The transport sector is recognized as a key pillar and a critical enabler in the achievement of this strategy.KIPPRA (2009) reports that it will be important to navigate around to establish the critical role played by this informal transport sector and the contribution it has on the economic wellbeing of the rural areas (KIPPRA, 2009). Further, the sector is expected to remain a key component in tackling such challenges as reduction of poverty and overall improvement in the general welfare of the population. As a result of this adopted and internalized social economic development, societies have experienced revolution in terms of the land usage as a result of changing the style of living. It is thus, apparent that, the role of transport sector in Kenya is significantly demanding while at the same time being complex well as social amenities such as schools and hospitals which remained a nightmare in these areas (KIPPRA' 2009).

Nyachieo's (2012) findings on *bodaboda* business illustrates how motorcycles are accessible and cheap for the reason that people get loan advance from the banks or even Shylocks. The rural people are able to buy motorcycles and without training they get into business to ensure they are able to repay the loan. Many unemployed youths have taken advantage of the poor road networks and lack of vehicles to transport passengers and goods, to earn their daily income by transporting people and goods using *bodabodas* from one place to another. Further, a study by Kumar (2011) shows with the immediate monetary returns and affordability especially where many people can be advanced loans or even sell property, majority of the rural people have embraced this mode of transport as easier and affordable solution to their livelihoods (Kumar, 2011). This agrees with Nyachieo's findings that young people have been attracted into *bodaboda* taxi business even without the necessary basic training which has also turned to be recipe to many accidents as well as violation of traffic rules (Nyachieo, 2012). Honwana, (2012), notes that the twenty-first century is marred with images of waiting youths who have become marginalized through underemployment and unemployment and are increasingly disconnected from their life aspirations. Nonetheless, these youths are

not just waiting; they continually develop new subjectivities that enable them to maneuver the changing labour markets (Mwaura, 2017). One of these subjectivities is *bodaboda* motorcycle industry. Nyachieo (2015) noted "The Haddon matrix can be applied to prevent traffic accidents in Kenya. This matrix has tried to look at all possible areas of safety interventions, but it may not apply to all countries the same way". Nyachieo (2015) argues, in the area of law enforcement to prevent crashes/accidents, it is evident that a country like Kenya has laws which are not enforced meaning that aspect may not help in preventing crashes. In the same way, looking at the environmental aspect of preventing crashes, a country like Kenya lacks road space allocation for motorcycles which could be an impediment in reducing motorcycle related accidents (Nyachieo, 2015). Also it may not be applicable particularly in Lodwar, Turkana County on environmental aspect being in the ASALs region. Evidence suggests that some interventions can improve the conspicuity of motorcyclists: (1) Bright coloured clothing and daytime running lights can improve conspicuity of motorcyclists. (2) Lighting that helps to accentuate the form of the motorcycle helps other motorists to determine the arrival time of the motorcycle. This is particularly useful at night. However, the effectiveness of lighting does depend on background surroundings (lighting conditions) (Helman et al., 2012) and the characteristics of the driving situation (e.g. urban vs. rural) (Weare and Parkes, 2013). (3)Riders should be aware of these limitations. Findings from Gould et al.,(2012)suggest that , media campaigns aiming to increase driver awareness of motorcyclists could also aim to increase knowledge about the potential for inaccurate judgments of vehicle speeds, particularly for motorcyclists (Gould et al., 2012).

Identification of Knowledge Gap

Boda boda business has been considered an alternative means of transport which is faster and readily available, spread widely and adopted in rural and urban areas leading to socio-economic wellbeing and development in Kenya. However, the number of frequent injuries to passengers and losses caused through road traffic accidents and litigation thereof poses questions on its significance to the society (Okebiro et al, 2022). Various studies have been conducted in Kenya on the participation of youths in *boda boda* transport sector, and illustrates that they were conducted and focused on different variables and locations not Turkana County. Such studies include: Obudho (2020) studied on Patterns of utilization of motorcycle Taxis in rural Kenya: A Study of Rongo Sub-County, Migori County, with the purpose of analyzing the patterns of utilization of motorcycle taxis in rural Kenya, did not focus on the influence of risky *bodaboda* riders behaviour on Road Safety socio-economic wellbeing of township residents. Keino, et al. (2020) Studied on Influence of motorcycle (*Boda boda)* Business on Pupil's Drop-Out in Public Schools in Rangwe Sub-County, Homa-Bay County, Kenya, on the objective to explore the influence of socio-economic factors (parents' level of education, level of income and peer pressure) on school drop outs, did not venture into the influence of risky *boda boda* rider's behavior on Road Safety socio-economic wellbeing of town residents (Okebiro et al, 2022). Atugi and Maendo (2018),Effect of *bodaboda* Business on Rural Transport System in Meru South County, Kenya, evaluated the economic and social effects on the rural transport system in Meru South County, not riders behaviours on Road Safety socio-economic wellbeing of residents; Kagwira (2017), on determinants of youth participation in transport industry, a case of *boda boda* in Meru County, Kenya, focused on demographic characteristics, operational capital influence, socio-economic characteristics affecting and market dynamics influencing youth participation and never touched risky behaviours of *bodaboda* riders.

Mugie (2017) study on Factors Determining growth of Motorcycle transport in Kajiado County, Kenya, specifically to establish the effect of access to finance, examine government policy and determine the effect of informality of operations on growth of motorcycle at Kajiado County, and did not study on the influence of risky *bodaboda* riders' behaviours on Road Safety social-economic wellbeing of town residents. Nyaga (2017) on the impact of motorcycle Taxi transport *(bodaboda)* in accessing the rural areas, a case study of Meru South sub county, focused on the socio-economic benefits of *bodaboda* to rural community, opening up of Kenyan rural areas, challenges faced the *bodaboda* motorcycle operators in Meru South. It did not

focus on the influence of *bodaboda* rider's traffic behavior on Road Safety socio-economic wellbeing of Lodwar town residents in Turkana County. Okonda,et al.(2015),researched on impact of motorcycle taxi on the emergence of other related Business activities in Siaya, but not rider's behaviour on socio-economic wellbeing of town residents. Rugut (2015) on determinants influencing performance of alternative public transport in Nakuru County, focused on livelihoods of youths not accidents in entire public transport sector. Nyachieo (2015) studied on socio-cultural and economic determinants of *bodaboda* transport safety in Kisumu County, Kenya and focused demographic characteristics, level of formal rider training among *bodaboda*, level of motor cycle safety knowledge, the rate of accidents involved, behaviors and attitudes of *bodaboda* riders in Kisumu East sub County, but not Turkana County. Olawo et al., (2014) conducted a research on the effect of increased investment in *Bodaboda* business on economic empowerment of people in Kisumu West District, looked at the economic empowerment of youths not their behaviours in the *bodaboda* business. The studies illustrate the lack of study focusing on the *bodaboda* rider's behaviours on wellbeing and socio-economic development among Lodwar town residents; Turkana Central Sub-County being Arid and Semi-arid lands (ASALS), Therefore, there is need for this research to explore the influence of *bodaboda* riders behavior on Road Safety socio-economic wellbeing of Lodwar town residents in Turkana county, Kenya and seeks to fill the literature gap identified (Okebiro, et al., 2022).

Research Methodology

This presents the methods and techniques of data collection, analysis and interpretation. It begins with the, geographical description of the study area, research design and population of the study. It also examined measures used to ensure that the study and its results were credible and finally it focuses on how the findings of the study were analyzed and presented and too looks at the ethical issues in the research study.

Study Area

The study was carried out in Turkana County in Kenya. Approximately 80% of the total land area of Turkana is arid or very arid (Pelto and Thuita, 2016).The temperatures range between 20ºC and 38ºC (mean of 30ºC) while the rainfall pattern and distribution is erratic and unreliable. There are two rainfall seasons: long rains usually occur between April and July and the short rains between October and November. A total of between 52mm and 480mm falls annually with a mean of 200mm (RMF 2011). The driest months are January, February, and September. The literacy rate in Turkana is only 24.5% (DHS, 2014).The severe conditions compel youths to look for a source of livelihood which they find *bodaboda* taxi business readily available to engage in and form as a source of income and socio-economic development (Okebiro et at., 2022).This kind of business empowers youths, however some get excited and do not bother to engage in serious driving training in colleges.

The major research sites for the study were located Lodwar town in Turkana County, Kenya, selected through purposive sampling because it allowed the researcher to use cases that have the required information with respect to the objective of the study (Mugenda and Mugenda, 2009). Lodwar town,in Turkana Central, Turkana County, was purposively selected as research site where *bodaboda* motorcycle riders are readily available for transporting goods, people and services to and from rural and urban areas. In rural areas the soil is loose due to the nature of the arid and semi-arid areas (ASALs), making *bodaboda* motorcycle to loose balance and sometimes causes accident.

Research Design

The research applied descriptive research design and a mixed method of approach. Research design is a plan and the procedure for research that span the decisions from broad assumptions to detailed methods of data collection and analysis (Johnson & Onwuegbuzie, 2006). Also, Cooper and Schindler, (2006) affirms that research design is the procedure in which data is collected, measured and analyzed in the view of the broad

assumptions. Therefore, the study adopted descriptive research design. Descriptive research design was used because this is a method of collecting information by administering a questionnaire to a sample of individuals (Orodho, 2003). As Gay (1981) defines descriptive research as a process of collecting data with the aim of testing hypothesis as well as with intent to answer the current questions about behavior which is under study. Also as defined by Glass & Hopkins (1984), descriptive research design involves gathering data that describe events and then organizes, tabulates, depicts, and describes the data collection and often uses visual aids such as graphs and charts to help the reader in understanding data distribution. According to (Mugenda and Mugenda, 2003), descriptive research allows a researcher to describe certain phenomena without manipulating variables of the study. Too, Kombo and Tromp (2006), noted, concerning descriptive design, that such studies are not only restricted to fact finding, but may often result in the formulation of important principles of knowledge and providing solutions to significant problems.

The basic assumptions of the method are to study the unit (*bodaboda* transport industry) in totality, because in order to study the behavior of an individual (*bodaboda* rider) at any particular time, it is not enough to study their situation at a particular time alone, thus, the whole life history, and background explained the behavior at a particular time. It is because of this basic assumption that the unit (*bodaboda* transport industry) was studied in its wholeness. The second assumption of this method is underlying unity, which implies that a particular unit (*bodaboda* rider) had its uniqueness but was different from other units in all respects. Therefore, the underlying unity (among *bodaboda* riders) made it possible for the study to apply the inferences drawn from the unit or groups of units to the group as a whole. It is because of this assumption that the particular unit (*bodaboda* rider) had a fruitful application in the prediction and control of the *bodaboda* rider's behaviour on socio-economic development among Lodwar town residents in Turkana Central Sub- County residents, Kenya.

Target population of the Study

A target population is that from which a researcher collected relevant facts that are related to the study. Jankowicz (2005), states population is a complete set of people, occurrences or objects from which a sample was chosen. According to Sekaran and Bougie (2010), a population is the total collection of elements about which inferences are made. Kothari (2009) refers to population as the total items about which information is required. The 2019 census in Kenya shows Turkana County has a total population of 926,976 with 164,579 numbers of households where an average household size is 5.6 (KNBS, 2019). From the 164,579 households of Turkana County therefore, this study targeted on average 17,210 households with at least *bodaboda* motorcycles which operate in Lodwar linking the major residential estates, namely; Kanamkemer, Nawotorong, Nakwamekwi, Soweto, Napetat, Johounsburg, and Kawarase. Lodwar town was chosen because it has a large number of *boda boda* riders. Other population of the study was 1 traffic police officer, 1 court clerk (key informant) officials and 2 *bodaboda* sales companies, 1 hospital administrator in Lodwar Referrals hospital. Since Lodwar town is a metropolitan area, the study population comprised people from different ethnic groups.

Sample Size and Sampling Techniques

The study employed both qualitative and quantitative approach and correlates with descriptive design to establish the *bodaboda* motorcycle rider's risk behaviour on socio-economic wellbeing among Lodwar town residents in Turkana County Kenya. From the whole population of the study area, 30% was selected purposively as a representative sample size. Therefore, the research used purposive sampling technique, which is non-probability. In determining the sample for this study, the research adopted the non-probability purposive sampling strategy in consistency with qualitative approach and survey study method. Non probability sampling suits this study because as Mugenda and Mugenda (2009) assert, the focus is on in-depth information on a particular issue and not on making inferences or generalizations. Hence, the study targeted *bodaboda* riders who are known to have the information that will serve the purpose of this study by

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virtue of their stations and duties (Kombo and Tromp, 2006). A sample is the selected unit from a few elements from the population (Mann, 2006) then a sample size is drawn which is neither excessively large nor too small, but optimum to fulfill the requirements of efficiency, representatives, reliability and flexibility (Kothari and Garg, 2019). A sample population of 376 was arrived at by calculating the target population of 1006 with a 95% confidence level and an error of 0.005 using the following formula taken from Kothari (2009).

$$n = \frac{Z^2 N.O2\,p}{(N-1)e^2 + Z^{2d}2\,p}$$

n = (Z. ^2 N.O■(2@p))/((N-1) e^z+Z^zd ■(2@p))

Where;

n = size of samples

N = Size of the population and given as 1006

e = Acceptable error and given as 0.05

dp = The standard deviation of the population and given as 0.5 where not known,

Z = standard variation at a confidence level given as 1.96 at 95% confidence level.

n= (1.96)2 X 1006 X (0.5)2

(1006 – 1) X (0.05)2 + (1.962 X 0.52)

n = 2009.62/5.35 = 375.8

n is approximately 376

According to Kothari and Garg (2019), from the whole population of the study area, 30% will be selected as a representative sample which is optimum. In this, according to Kumar (2014), when determining a sample size, says 30 % of the total population as illustrated in table 3.

Table 3 Sample Size for the Study

Population	**Sampling and procedure**	**Sample size**
17,210 households with motorcycles	Krejac& Morgan	377
1 Traffic police officer	Purposive	1
1 Court clerk	Conveniently	1
2 Bodaboda Sales Companies	Purposive	2
1 Hospital administrators	Purposive	1
Total		**382**

Source:Okebiro et al.,2022

The 377 *bodaboda* motorcycle riders were randomly selected based on the proportional allocation from the residential estates in Lodwar Town as research sites including : Kanamkemer, Nakwamekwi, Nawotrong, Napetet, Johansburg and Soweto, (ii)) One Court clerk(key informant) were purposively sampled to give information on the number of cases handled, number jailed, fines charged to motorcycle *bodaboda* errant. (iii) Two motor cycle selling companies and their credit officers were purposively selected to give

information on the number of motor cycles they have sold or given on credit to their potential customers. (iv) One Hospital administrators was purposively selected from one Lodwar District Referral Hospital in Turkana Central Sub-County, to give statistics on the number of patients admitted due to *bodaboda* motorcycle accidents, the number of deaths and injured. And one traffic police officer (Key informat) was purposively sampled to the statistical data of accidents in last five years.

Instruments of Data Collection

The research used two data collection instruments including interview schedules and questionnaires, as the research targets both primary and secondary data. The rationale for applying multiple forms of data collection was to establish credibility and validity in the findings of the study through triangulation. This is supported by the views of Hendricks (2006), who affirms that "looking at multiple forms of data when answering research questions helps the researcher fill in the gaps that would occur if one data source was used" This study used the primary data that were obtained through use of questionnaires and interview guides. Research studies usually uses questionnaires and interviews to determine the opinions, attitudes, preferences and perceptions of groups of people of interest. Questionnaires are used to collect basic descriptive information from a broad sample (Kathuri and Pals, 1993). This study involved gathering opinions from motorcycle (*bodaboda*) users and dependents in Turkana Central Sub-County. The opinions were used to generalize the results to be applicable to the other parts of the country with similar profile and transport industry. Therefore, the study considered the design appropriate as it contributed towards minimizing biases hence maximizing reliability of data collected.

Questionnaires

A structured questionnaire was used as the main instrument of data collection. In this research the questionnaires were be used to gather information from, 2 sales companies of motorcycles, 1 court official (Key informant) and 377 respondents from the residential estates in Lodwar in Turkana Central Sub-County. The questionnaire was divided into five parts: part A, covering the demographic information, part B was cover the information capturing objective one, part C, objective two, part D objective three and part E objective four. The variables in part B to E was measured by five Likert scale. The questions were constructed to have both open ended and closed ended questions. Open ended questions was used to encourage the respondents to give in-depth and felt response without feeling held back in illuminating of any information, while closed ended questions allows respondents to respond from a limited option that had been stated. Saunders (2011), noted, open ended or unstructured questions allow profound response from the respondents while the closed or structured questions are generally easier to evaluate. For this reason, the responses for few questions of the open-ended questions was recorded as given from the respondents without alteration and closed was evaluated and interpreted for better analysis.

According to Mugenda and Mugenda (2009), the closed-ended questions are easier to analyze as they are in immediate usable form and easier to administer because each item is followed by alternative answers to choose. Questionnaires are free from bias of the interviewer, as answers are in respondent's own words; respondents also have adequate time to give well thought out answers (Kumar, 2014; Kothari and Garg, 2019). However, they are disadvantageous because responses are limited and confined into alternative answer, and the respondent were compelled to answer questions according to the researcher's choice and this makes it difficult to construct and become relevant to the required in the focused study. Questionnaires were used to collect data from respondents who were educated and cooperative and there was no possibility of ambiguous replies or omission of replies to certain questions and interpretation of omissions was minimal (Kumar, 2014; Kothari and Garg, 2019). Therefore, for these reasons, the research applied open-ended questions as they permit a wide depth of reasoning and response which may be indirectly or directly given. Similarly, the respondent's may give the insight into their feelings, background, hidden motivation, interests and decisions. However, when the respondents are free to give individual response deemed to be proper they

can overstretch and give information which are not needed in the study and become irrelevant and not answer as stipulated in the research questions or objectives (Mugenda and Mugenda,2009).

Interview Schedule

Interview schedules was used to gather information from key informants including the one traffic police officer, one hospital administrator, one court clerk and two motorcycle sale companies. Interviews are one of the most important sources of data in qualitative research (Mugenda & Mugenda, 2009), and are advantageous in that they provide in-depth data which is not possible to obtain, so that to meet specific objectives of the study and also guard against confusing the questions since the interviewer can clarify the questions thereby helping the respondent give relevant responses. The interviewer can collect supplementary information about the respondent's personal characteristics and environment which is often of great value in interpreting results. Similarly, the language of the interview can be adapted to the ability or educational level of the person interviewed and as such misinterpretations concerning questions can be avoided. The interviewer usually controls which person(s) answered questions (Kothari and Garg, 2019). However, Interviews can be time-consuming and as such, they are expensive to use with a large number of respondents who are spread in wide geographical area. There remains the possibility of the bias of interviewer as well as the respondent and at times also introduced systematic errors (Kothari and Garg, 2019). Similarly, interviews are adaptable, flexible and show concern for human interaction; they often introduce bias and subjectivity into the study (Mugenda and Mugenda, 2009).

Data Collection Procedures

This sub – section dealt with data collection procedures and specifically pre-testing and field data collection, validity and reliability of research instruments.

Pre-testing

Before engaging on data collection, the developed tools were pre-tested on 25 people (*boda boda* riders) in similar conditions to the research. As a general rule, 10-15 people are enough for a pre-test. This was done to ensure validity and reliability of the items in data collection tools.

Field Data Collection

The research assistants were trained and supervised to enable them collects quality data from the respondents. Primary data consisted of both qualitative and quantitative nature. Quantitative data was obtained from the *bodaboda* motorcycle riders using questionnaires. Qualitative data was obtained from key informant interviews and focus group discussions by use of interview schedules. Interview schedule allowed for clarification in case the questions asked were unclear to the respondents.

Validity of the Research Instruments

This study adopted content validity which refers to the extent to which a measuring instrument provides adequate coverage of the topic under study. Amin (2005), validity formula, was used in line with other previous studies (Lefort and Urzua, 2008), that is, the formula is: content validity Index= (No. of judges declaring item valid)/ (Total No. of items). This study used CVI of about 0.78 or more experts could be considered evidence of good content validity as recommended by Amin (2005).Validity refers to the ability a test measures what it is supposed to measure (Kombo and Tromp, 2016; Kothari, 2004). Construct validity was measured to ensure that the instruments are measuring what they are supposed to. A content validity test was used to measure instrument validity. According to Mugenda and Mugenda (2009) this type of validity measured the degree to which data collected using a particular instrument represented a specific

domain of indicators or content of a particular concept. In this sense, validity is a degree to which the sample of the test item represent the content that is designed to measure, that is, the instrument measures the characteristic or trait that is intended to measure (Mugenda and Mugenda, 2009).

To ensure validity of research instruments, the researcher will use simple language that is easy to be understood by the *bodaboda* riders. The researcher also engaged the supervisors and other experts to ensure that questions asked in questionnaires were tested and measure what they are supposed to measure as per the objectives of the study.

Reliability of the Research Instruments

In this study, the instruments were tested through the measurement of reliability to provide consistency in the measurement of variables (Zhang and Tang, 2000). The aim of reliability is to ensure that later investigations arrived at the same findings and conclusions if following exactly the same procedure described by an earlier investigator, and conducting the same case study all over again and too reduce the errors and biases in a study (Yin, 2009). Cronbach alpha is the basic formula for determining the reliability based on internal consistency. For testing the reliability of instruments, internal consistency techniques were applied using Cronbach's alpha. The alpha value ranges between 0 to 1. Thus, the coefficient of 0.6-07 is a commonly recommended that indicates acceptable reliability and 0.8 or higher indicate good reliability (Mugenda and Mugenda, 2009).

Methods of Data Analysis

The study generated both qualitative and quantitative data from the mixed methods approach. Qualitative data were generated from key informants. Interviews and from open ended questions in the questionnaire while quantitative data was generated from the closed-ended questions in five Likert scale. Data collected was coded and entered in the computer for analysis using the statistical package for social sciences (SPSS) version 23. Mugenda (2008) asserts that it is advisable to use computers for any kind of data analysis in order to save time and increase the accuracy of the results. Data was then analyzed using descriptive statistics by frequency counts and percentages. According to Orodho (2003), this technique gave simple summaries about the sample data and present quantitative descriptions in a manageable manner. Borg (2006) also noted the commonly used methods in reporting descriptive surveys are frequency distributions, percentages and tabulations.

The findings were presented using tables, charts and graphs for further analysis and facilitation of comparisons. This was generated to quantitative reports through tabulations, percentages and measures of central tendency. Descriptive statistics such as measures of central tendency and dispersion along with percentages were used to organize and summarize numerical data whose results were presented in tables for easy interpretation of the findings (Zhang, 2000).

Ethical Considerations

The Postgraduate School wrote a letter of approval for the researcher who used to apply for a permit from the National Commission for Science, Technology and Innovation (NACOSTI). In terms of ethics, the researcher sought permission from the relevant organizational authorities to gain access to the Research sites (Urban Center) in Lodwar town in Turkana -County, before data collection. As Creswell (2011) notes, the researcher developed an informed consent form for participants to sign before engaging them in the research, and acknowledging that their rights would be protected during data collection, element of which included; identification of the researcher; the benefits for participating in the research, the level and type of participant involvement; guarantee of confidentiality, provision of names and persons to contact if questions arise. The researcher kept or ensured anonymity of the participant and kept their names secret so that any

other person were unable to identify who gave the information. This helped the researcher to keep the information for intended purpose and thus within the boundaries of the shared consent.

Data Presentation and Interpretation of Findings

The chapter presents study findings, analysis and interpretation of the data gathered from the field using questionnaires and interview guide. This chapter is sub-divided according to the study objectives and findings presented using tables to summarize and illustrate the findings of the study.

Response Rate

The instruments for data collection were administered, 377 *bodaboda* riders' questionnaires, were distributed to each identified respondent who filled, responded and returned. For those who requested for more time, cordially acceptable dead lines were fixed against which the copies would be collected. At the expiry of the period, 336 copies were successfully collected and returned for analysis. This represented 89% response rate which the researcher used to analyze the data. The response rate was 89% which was owned to the keen interest extended by the researcher to distribute all the questionnaires and make detailed follow up to collect them back for analysis. The researcher interviewed the respondent key informants and focused groups and filled the interview schedule himself. This response rate was satisfactory to make conclusions for the study. Mugenda and Mugenda (2003) states that a response rate of 50% is adequate for analysis and reporting; a rate of 60% is good and a response rate of 70% and over is excellent.

The relationship between *bodaboda* Business and Road Safety and Socio-Economic Wellbeing of Residents

To achieve this, the Chi-square test was employed to test whether there exists a relationship between *bodaboda* business and Road Safety and Socio-Economic Wellbeing of Residents. The null hypothesis stated that no association between *bodabaoda* business and Road Safefy and Socio-economic Wellbeing of residents in Turkana Central Sub County. The obtained information was computed and findings are presented in Table 4.2

Table 4.2: Chi-square Test for *Bodaboda* Businesss and Road Safety and Socio-Economic Wellbeing.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	343.514[a]	12	.000
Likelihood Ratio	20.981	12	.051
N of Valid Cases	336		

Results in Table 4.3 revealed that proportion of respondents to a large extent agreed that *bodaboda* business influenced Road Safety and Socio-economic wellbeing of resident by $X2, (24, N=335), P<05$. This implied there exist a statistically significant relationship between *bodaboda* business and Road Safety and Socio-Economic Wellbeing of residents in Lodwar town in Turkana County. Further, the findings hold true reflections that *bodaboda* business is mushroom in Kenya, thus it is a positive indicator to a socio-economic development in Turkana Central Sub County.

These findings are a true reflection of the study, descriptive analysis that majority 183(54.5%) of the *bodaboda* riders indicated that no insurance cover, and it is a traffic behaviour that occurs at a very large extent. It means that as per business, it is of great concern; therefore *bodaboda* riders with no insurance

cover are traffic behaviour in Turkana County. This result corresponded to Starkey (2016) that most of *bodaboda* riders in rural areas operate without insurance and without the required vehicle tax levies. Most of the *bodaboda* have no insurance cover because they are employed and the motorcycle is not owned. The owner of the motorcycle normally considers the terms of sales through cash basis. Since the terms are cash basis the motorcycles are insured on two phases. The first phase of insurance covers the motorcycle when it is distributed and transported from the manufacturer in Nairobi to the company sales company branches. The second phase of insurance is to cover the motorcycle when the ownership is transferred from the company to the customer who purchases it. Therefore, based on the results, the null hypothesis was rejected and the study introduced an alternative hypothesis that there exists a statistically significant relation between *bodaboda* business and Road Safety and socio-economic wellbeing of the residents in Lodwar town in Turkana County, Kenya.

The Evaluation of Interventions by Stakeholders on Influence of *bodaboda* Rider's Behaviour on Road Safety of Lodwar town Residents in Turkana County

The study investigated the possible interventions to influence of *bodaboda* riders behavior on Road Safety and Socio-economic Wellbeing of residents in Turkana County, Kenya.

Stakeholders Supporting Project Interventions

This was analyzed basing on six variables as follows: County Government through their policy regulations, private sector like SACCOs, National Government through their legal framework, Non-Governmental organizations (NGOs), and none presented in percentage in Table 4.3

Table 4.3: Stakeholders Supporting Project Interventions

Responses	**Frequency**	**Percentage**
County Government through their policy regulations	200	59.5%
Private Sector like SACOOs	70	20.8%
National Government through their legal framework	30	8.9%
NGOs	20	6.0%
None	16	8.8%
Total	**336**	**100%**

Source: Research findings (2022)

The study sought to establish from the *bodaboda* riders the type of stakeholders that are supporting project interventions that seek to promote *bodaboda* Road Safety socioeconomic wellbeing in their area. Majority 200 (59.5%) of the *bodaboda* riders indicated County Government through their policy regulations as stakeholders, 70 (20.8%) indicated private sector like SACCOs as stakeholders, 30(8.9%) indicated National Government through their legal framework as stakeholders, 20 (6.0%) indicated NGOs as stakeholders, while 16 (8.8%) of them indicated none as stakeholders as shown in Table 4.10 above. It implies that stakeholders that are supporting project interventions that seek to promote *Bodaboda* Road Safety socioeconomic wellbeing in their area include; County Government through their policy regulations, private sector like SACCOs, National Government through their legal framework, and NGOs.

Challenges Affecting Effectiveness of Interventions

This was analyzed basing on the following five aspects: Lack of training for *bodaboda* riders, corruptionand harassments of *bodaboda* riders by police, alcohol and drug abuse, lack of funds, Covid-19 pandemic presented in percentages in Table 4.2

Table 4.2: Challenges Affecting Effectiveness of Interventions

Responses	**Frequency**	**Percentage**
Lack of training for *boda boda* riders	200	59.5%
Corruption and Harassments of *boda boda* riders by police	70	20.8%
Alcohol and drug abuse	30	8.9%
Lack of funds	26	7.8%
Covid-19 pandemic	10	3.0%
Total	**336**	**100%**

Source: Research findings (2022)

Findings in Table 4.2 revealed the challenges affecting effectiveness of intervention seeking to eradicate *bodaboda* risky behaviour. Majority 200(59.5%) of the *bodaboda* riders indicated lack of training for *bodaboda* riders, 70 (20.8%) indicated Corruption and Harassment of *bodaboda* riders by police, 30 (8.9%) indicated alcohol and drug abuse, 26 (7.8%) indicated lack of funds, while 140 (3.0%) of them indicated covid-19 pandemic. It means that the challenges affecting the effectiveness of intervention seeking to eradicate *bodaboda* risky behaviour include; lack of training for *bodaboda* riders, corruption and harassment of *bodaboda* riders by police, alcohol and drug abuse, lack of funds, and covid-19 pandemic.

The qualitative data was obtained from the key informants and focus groups in the traffic police station, the hospital, the motorbike sales companies, and the court. The interview schedule was administered to the Court Administrator as the key informant and the following data was analysed. There are cases of *bodaboda* accident victims in the court, and the major cause of accidents is careless riding under the influence of drugs. According the court statistical data indicates that the category of the road users reported likely to cause a *bodaboda* motorcycle accidents are between the ages of 18-25 years especially the motorcyclists, cyclists/bicycles, personal vehicles, pedestrians and buses. It was indicated that there is no national policy in place that governs operations of *bodaboda* motorcycle transport sector. Once the *bodaboda* rider is involved in the accident, the court advice the rider to go to hospital and later to police station to make a report on the accident. It was indicated that the riders do not understand the traffic rules, because most of them have not attended training/driving schools for professional qualification and acquire a driving /riding license. It is shown that the *bodaboda* riders adhere to traffic rules if they understand them when they are trained from driving schools. The *bodaboda* are inadequately trained because majority of them are self-trained or through apprenticeship. Nyaga (2016) notes “in terms of training, many of the riders do not have formal training, instead big percentage of them acquire riding skills through fellow riders who had no formal training also, by paying a fee of between 50 and 200 Kenyan shillings. This indicates that most of riders in Turkana have no license for riding legally. The statistical data from the court shows 500 *bodaboda* riders have jailed because of causing accidents for five years between 2016 and 2020.

The data from the motorcycles sales companies shows that they sell one type/brand of motorcycles known as “*Honda*”. The company has branches in various towns in Kenya, which two branches located in Kitale and Eldoret Towns respectively, one main branch in Nakuru town and Lodwar respectively. The terms of sales are through cash basis and therefore do not give offer hire purchase services to their customers who are normally *bodaboda* businessmen or riders. Since the terms are cash basis the motorcycles are insured on two

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phases. The first phase of insurance covers the motorcycle when it is distributed and transported from the manufacturer in Nairobi to the company sales company branches. The second phase of insurance is to cover the motorcycle when the ownership is transferred from the company to the customer who purchases. When the customer buys the motorcycle in the shop's company, there are two options, either to accept or not the motorcycle to be insured from the company. If the customer agrees to insure the motorbike, the branch manager can process the insurance cover immediately. The insurance costs kshs.4, 000 (four thousand Kenya shillings) for a private motorcycle and ksh.7, 000 (Seven thousand Kenya shillings) for public/commercial motorbike. There is a comprehensive cover costing ksh.12, 000 (Twelve thousand shillings) which covers the driver/rider, the passenger and the motorbike. The Honda motorbike without insurance cover and electric starter, costs ksh.132, 900 (One hundred and thirty two thousand and nine hundred shillings) and kick/manual starter costsKsh.126, 400(One hundred and thirty-six thousands and four hundred shillings).The Honda motorbikes of 110 cc with electric starter costs Ksh.116,400 (One hundred and sixteen thousand four hundred shillings) and 110 cc kick/manual costs ksh.113,400 (one hundred and thirteen hundred shillings).

It was noted that most of the customers of 98 percent do not agree to insure their motorbikes when they purchase them. However, the company gives the customers who purchase motorbikes the following advice: (i) to keep maintenance of the motorbike through proper servicing (ii)the company gives free service once per a month to the customers for a warrant of one year.(iii) the company gives a warrant of the motorbike sold for one year equivalent to 6,000 kilometers mileage.(iv) The warrant covers the engine (inside engine) not outside engine; shocks(only front shocks) and rear shocks on the back; covers headlamp in case of manufacturer error.(v) The motorbike comes from the manufacturer with driver/rider kit including, the jacket(Heavy),two reflector vests, one meant for the rider to wear and the other for passenger. Therefore, the rider or customer is advised to wear always reflectors while riding. In case of carrying a passenger, the rider should ensure the customers wear the reflector vest. Because of competition among the riders and fear of losing a customer to another rider, they are always on the on their marks to win as many customers as possible to earn more money either for himself or for the owner of the *bodaboda*. A factor for not ensuring the customer to wear the reflector for fear of wasting time and losing a customer has been observed. (vi)The motorbike has two helmets. The company assumes, one will be used by the rider/driver and the other to be a spare in case it is a private and not used for commercial purposes (vii)the motorbike has a tool kit to be used in case of their occurs a mechanical problem or any emergency on the road while riding. And the company has spare parts for motorbikes for customers at an affordable price.

The other key informant interviewed in the research study was the Traffic police officer and questions were asked according to interview schedule. The officer indicated the cases recorded due to *bodaboda* accidents are five (5) per day, twenty five (25) per week and a hundred (100) per month. The statistics o *bodaboda* accidents recorded are as shown in Table 4.3

Table 4.3: The Statistical Data of *boda boda* Accidents Recorded for the Last Five Years

YEAR	**2017**	**2018**	**2019**	**2020**	**August2021**	**Total**
Slightly injured	390	420	400	350	100	**1660**
Seriously injured	205	210	150	120	75	**760**
Death	98	90	80	70	30	**368**
Total	**693**	**720**	**630**	**540**	**205**	**2788**

Source: Lodwar Police Station, Research findings (2022)

The findings in Table 4.3 show that the main causes of the accidents as per records are three: Bicycles, Personal cars and pedestrians. The traffic officer suggested the following measures /strategies to minimize

the rate of accidents; (a) The cyclists must be trained and attain riding licenses before they start riding on roads or highways (b). The county government through the Ministry of Transport and Infrastructure should erect road sign along the road or highways in specific places. (c) Creating public participation through mobilization of drivers (d) Enforcing tough penalties to traffic offenders in courts of law.

Conclusions and Recommendations

Interventions Employed by Stakeholders Influence of *Bodaboda* Behaviour on Road Safety Socio-Economic Wellbeing and Development

The objective of the study was to evaluate the interventions employed by stakeholders influence *bodaboda* behaviour on Road Safety socio-economic wellbeing of Lodwar town residents in Turkana County, Kenya. The study revealed that there are stakeholders that are supporting project interventions that seek to promote *bodaboda* socioeconomic wellbeing in their area. 59.5% of the *boda boda* riders indicated County Government through their policy regulations as stakeholders, 20.8% indicated private sector like SACCOs as stakeholders, 8.9% indicated National Government through their legal framework as stakeholders, 6.0% indicated NGOs as stakeholders, and 8.8% of them indicated none as stakeholders.

The study also revealed that there are challenges affecting the effectiveness of intervention seeking to eradicate *bodaboda* risky behaviour. 59.5% of the *bodaboda* riders indicated lack of training for *bodaboda* riders, 20.8% indicated Corruption and Harassments of *bodaboda* riders by police, 8.9% indicated alcohol and drug abuse, 7.8% indicated lack of funds, while 3.0% of them indicated covid-19 pandemic.

Conclusion of the Study

Arising from the research findings, it can be concluded from the study's findings that; the development projects initiated by *bodaboda* riders on socio-economic wellbeing, have been initiated thorough other income generating projects operated by *bodaboda* riders, and they include; retail businesses like butchery, service businesses like barbershop, farming, livestock rearing, and saving in SACCOs. The stakeholders supporting project interventions that seek to promote *bodaboda* socioeconomic wellbeing in their area include; County Government through their policy regulations, private sector like SACCOs, National Government through their legal framework, and NGOs. The challenges affecting the effectiveness of intervention seeking to eradicate *bodaboda* risky behaviour include; lack of training for *bodaboda* riders, corruption and harassments of *bodaboda* riders by police, alcohol and drug abuse, lack of funds, and covid-19 pandemic.

Recommendations

Bodaboda riders should be encouraged to venture into other development activities as a way of increasing their income.

Stakeholders should be sensitized on the importance of promoting *bodaboda* Road Safety and Socio-Economic Wellbeing, through the following five strategies (KIPPRA, 2022)**, first,** the government of Kenya has put in place a **comprehensive policy**, legislative and regulatory framework to help govern and develop the sector. This includes enhanced collaboration among key stakeholders, for example NTSA and dealers to ensure that all buyers of new motorcycles have PSV licences and details captured in the database before releasing the motorcycle. **Secondly**, the law enforcement agencies should strictly **enforce the law** and ensure high levels of discipline on the roads. This includes wearing of helmet and reflector jackets, observing traffic rules, not carrying more than one passenger, frequent inspection and crack down of traffic rules' violators. Furthermore, the government could consider designing special lanes exclusively for motorcycles to avoid lane splitting and install speed cameras in designated areas along special lanes

accompanied by a metered system installed on motorcyclists' phones**.** This is to allow streamlined cashless payment for speed violators and enhance surveillance of the sector to identify traffic violator patterns as is the case in Rwanda. **Thirdly** Adoption of the **code identification** system on the number plate across the country as is the case of Thika town. Collaboration by all registered motorcycle SACCOs and telecommunications companies could propose adoption of the code system for all riders. The identification system could be linked to the database, in which the details of *bodaboda* motorcycles will eventually be recorded. These details include engine and chassis numbers, owner information, rider information, and his cooperative affiliation. This system will boost GPS tracking system and passengers will be able to track and rate the riders by using their mobile phones, thus enhancing effective regulation and regaining the public confidence towards the sector. **Fourthly,** Collaboration between county governments and driving schools to establish an appropriate curricular and facilitate **training** of *bodaboda* riders on road traffic discipline and behaviour change. To achieve this intervention, county governments need to ensure they mobilize riders through their SACCOs to attend trainings and testing regularly. Participants could be incentivized through county parking fees waiver for one year and free registration to National Health Insurance Fund. **Fifthly,** Need for increased intelligence and surveillance to beef up **security** through installation of CCTV cameras, streetlights, and self-regulations mechanisms by SACCOs, crackdown of *bodaboda* violators, and reviving *nyumba kumi* initiatives will help reduce the crime rate. Also, dealers of *bodaboda* need to ensure no release of new *bodabodas* before registering with the NTSA to address the crime normally committed by unregistered *bodabodas.* The key stakeholders could consider conducting frequent public awareness and sensitization on crime prevention and road safety (KIPPRA, 2022).

Suggestions for further studies

The researcher suggests the following further areas of research

1) The researcher recommends that a study be carried out on the role of passengers' behaviour on road safety and *Bodaboda* operation in /urban centres in Kenya

2) The researcher also recommends that a study be carried out on the influence of passengers on crimes by *bodaboda* riders during business operations.

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