

Assessment of the Attitudinal Behaviour of Boda Boda Riders in Dar es Salaam, Tanzania

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Boda boda taxis play a significant role in Tanzania's transportation sector. Still, the attitudinal behaviour of the riders has raised questions about the safety of the Boda Boda taxis. This study assessed the behavioural attitude (human attributes) of Boda Boda riders in Dar es Salaam. In carrying out this assessment, the socio-economics of the Boda Boda Riders and their attitudinal behaviours towards safety practices were examined. The study adopted a cross-sectional survey approach to collect data; simple descriptive statistics were used to analyse the data collected. The study revealed that despite the training facilities available for Boda Boda riders in Dar es Salaam, 67% of the Boda Boda riders did not receive any formal training. Driving under the influence of Alcohol was prevalent among Boda Boda riders in Dar es Salaam, as 26.67% of the respondents were culpable of this offence. The study further revealed that all the Boda Boda riders in Dar es Salaam were lacking in various safety measures. The study concludes that drug abuse was common among Boda Boda operators, regardless of the education level. The study, therefore, recommends that the dangers of the use of alcohol, drugs and other psychoactive substances should be included in the training curriculum to further enlighten Boda Boda riders on the dangers of riding under the influence of drugs. There should be strict regulations on traffic offenders.

Keywords: Behaviour, boda boda, Dar es Salaam, riders, transportation system, motorcycle

Introduction

Boda Boda (Commercial motorcycle) is a significant feature of the paratransit mode in East African countries. The Boda Boda is perceived to be a quick transport option among urban dwellers in East Africa. Compared to other paratransit modes, the Boda Boda is believed to easily navigate areas and routes that other paratransit modes will find difficult to access (Africa Community Access Partnership, 2015). Apart from being seen as a quick means of transportation, the Boda Boda taxi also serves as a means of livelihood (Odwokacen, 2015). For example, Boda Boda Taxi is believed to be the second-largest employer of youths in Uganda (Amone, 2021), as over 1.3 million youths are assumed to be engaged in the Boda Boda business (Mbegu & Mjema, 2019). Similarly, the Boda Boda taxi business is said to significantly influence the livelihood of youths, as 1.2 million and 1.1 million youths are believed to be employed by the Boda Boda taxi business in Kenya and Tanzania, respectively. Despite the benefits of Boda Boda to urban residents in East Africa, the paratransit mode also poses safety challenges for the users.

According to Omunyokol (2023), four people die daily from Boda Boda-related accidents, resulting in an estimated death of 1,500 persons annually in Uganda. The number of fatalities associated with Boda Boda tends to be higher in Tanzania, as 16,000 people die annually as a result of the Boda Boda accident (Christopher, 2022). The statistics of victims

of Boda Boda accidents in Tanzania translate that 44 persons die daily in the country from Boda Boda-related accidents. Various causal variables have been attributed to Boda Boda-associated accidents in Dar es Salaam and other East African Communities. The causal variables of Boda Boda accidents have been assessed using the multi-dimensional approach of human and environmental attributes (Salum *et al.*, 2019). Of all these casual attributes, human attributes (attitudinal behaviour) are perceived to be of high risk (Nguyen *et al.*, 2018; Nzuchi *et al.*, 2022; Okebiro *et al.*, 2022). This assertion implies that the persistence of Boda Boda-related accidents hinges on the attitude and behaviour of the Boda Boda riders.

The behavioural attitudes frequently noticed among Boda Boda riders in urban areas in East Africa are reckless riding, riding under the influence of alcohol and drugs, high speed, and not following road signs (Amone 2021; Okebiro *et al.*, 2022; Siya *et al.*, 2019). The attitudinal behaviours aforementioned compromising the safety of Boda Boda taxis in urban areas of East Africa are also evident in Dar es Salaam, Tanzania, the study area for this study. Salum *et al.* (2019) noted that attitudinal behaviours of Boda Boda riders in terms of speeding, driving under the influence of drugs and alcohol, reckless riding, and riding without a helmet have contributed to the number of fatalities of Boda Boda accidents in Dar es Salaam. Various studies (Daily News, 2014; Eliakunda *et al.*, 2018; Kinyaga, 2017; Mwakalila, 2025; Nguyen *et al.*, 2018) have been carried out on Boda Boda-

related accidents in Dar es Salaam, but few of these studies focus solely on human attributes as the causal factor of Boda Boda-related accidents. Against this background, this study assessed the behavioural attitude (human attributes) of Boda Boda riders in Dar es Salaam, with the specific objectives of this study being to examine the socio-economics of the Boda Boda Riders and their attitudinal behaviours towards safety practices.

Boda Boda as Urban Commercial Transport: Motorist Behavioural and Safety Concerns

The emergence of the motorcycle as one of the preferred and available urban modes of transport in African cities can no longer be ignored. They serve as a transport option for public and private goods and service trips among African commuters and households. When observed from the European or developed nation lens, the rationality in the adoption of this urban transport alternative continues to amuse many. However, scholars have positioned that beyond the rational planning position to urban mobility, issues of behaviour, psychology and sociological underpinning drive model options in Africa. This is evident in the role of commercial motorcycles, such as *boda boda*, in the urban population. The choice of *boda boda*, according to some studies in East Africa, is due to its perceived ability to navigate unpaved urban African terrain (Evans *et al.*, 2018; Martin *et al.*, 2023; Stewart, 2024). In developing countries, motorcycles, often referred to as *boda boda*, provide transport alternatives to unpaved terrain, supporting household livelihood, employment opportunities and providing a quick and easy navigation within urban traffic (Ng & Yi, 2016; Evans *et al.*, 2018; Bryceson *et al.*, 2003; Ngalesoni *et al.*, 2025; Luinga, 2021). Many households depend on motorcycles as their most preferred transport option, as they often support the last-mile access to destinations. Marquet and Miralles-Guasch (2016) reported that many urban commuters perceive this modal split to be reliable and fast when compared to other modes.

However, despite the various planning, sociological and psychological factors that drive the adoption of motorcycles, safety concerns amongst motorcyclists and riders persist. Bezabeh *et al.* (2022) extensively documented that despite the high population of motorcycles in East Africa, the incidence of riders' and passengers' deaths and injuries from crashes remains high. The author states that motorcycle safety is therefore a significant problem in East Africa. The reason is not far from the position of the World Health Organisation (2018) that 22.5% of road traffic deaths in 2016 involved riders/passengers of two- and three-wheelers.

The studies of Konlan and Hayford (2022) and Oladeji *et al.* (2024) reported that of the almost 400,000 annual deaths of motor riders across the globe, Africa accounted for 28% of the global fatalities. Drake *et al.* (2024), in reference to the WHO (2018) Global Status

Report on Road Safety, reported that approximately 25% of the road traffic crash fatalities involve motorcycles. In further alignment with the position of Sawe *et al.* (2017), the authors further reported that in Dar Es Salaam, 70% of traffic incident trauma were road traffic crashes that involve motorcyclists. One key factor that was reported to account for increasing motorcycle accidents and crashes was the behaviour of motorcyclists (Özkan *et al.*, 2012; Oxley *et al.*, 2013; Yousif *et al.*, 2020). The safety concerns are driven and heightened by negative attitudes and behaviours such as speed violations, road stunts, non-compliance with traffic infrastructure, non-use of helmets, and illegal roadside parking.

Although studies have reported on the multifaceted nature of the traffic behaviours, for instance, the socio-economic profile of motorcyclists has been reported to influence traffic decisions and behaviour (Wong, 2011; Haqverdi *et al.*, 2015; Putri *et al.*, 2022). Some studies have reported that there exists a relationship between the level of education and urban transport behaviours and traffic safety among informal operators and, more importantly, motorcyclists (Johnson & Adebayo, 2011; Musselwhite *et al.*, 2012; Nyachio, 2015; Das *et al.*, 2023).

Although there have been increasing discussions on safety concerns and driving behaviours and attitudes of motorcyclists across the globe, and in many parts of East Africa. There still exists a vast gap in knowledge on motorcyclist behaviour in Tanzania. Beyond the gap in urban transport safety among motorcyclists in this country, providing informed behavioural and sociologically conscious decisions and interventions that are sustainable demands understanding the traffic behaviour of these motorists. The argument is that perhaps, understanding the traffic decisions of motorists along with the self-perception of traffic behaviour of motorcyclists in Dar Es Salaam, will offer urban managers and planners better informed path towards accident-free mobility in the city.

Study Area

This study was carried out in Dar Es Salaam, the capital of Tanzania. Dar Es Salaam, which is often referred to as the "Haven of Peace" (Dar es Salaam City Council, 2017), is located on the eastern coast of Tanzania on Latitudes 6.45° S and 7.25° S and Longitudes 39.0° E and 39.55°E (Kebede and Nicholls, 2012). The Indian Ocean borders the city on the Eastern axis. According to the Population and Housing Census of Tanzania (2022), the city is said to have a population of 5,383,728, constituting 8.7% of the total population of Tanzania. The common means of transportation in the city are Bajaj tricycles (Indian Made Tricycle), the Government Bus Rapid Transit system, and Boda Boda. Due to the significant role played by the Boda Boda services in Tanzania, the

study focuses on the attitudinal behaviours exhibited by Boda Boda riders in Dar es Salaam.

Research Methodology

Source of data, sampling frame and sampling technique

The pilot study adopted a quantitative approach. The cross-sectional survey was used to collect data using a structured questionnaire for the pilot study. Socio-economic characteristics and the attitudinal behaviour of the Boda Boda riders towards safety measures were collected through questionnaires. Data on the population were sourced from the Population and Housing Census of Tanzania, 2022. Data on the physical characteristics of Dar es Salaam were obtained from the Dar es Salaam City Council report of 2017. Boda Boda “Stages” (Parks) were selected in neighbourhoods with high socio-economic activities in Dar es Salaam. The Boda Boda “stages” selected were in Shekilango, Uhuru, Morocco, Mlimani City, Coco Beach and the University of Dar es Salaam. In each stage, five active Boda Boda riders with at least five years of experience were selected for this study using purposive sampling technique. The Boda Boda riders with five years or more experience were chosen to ensure that the data collected is from riders who have gained experience on Boda Boda-related problems. A total of 30 questionnaires were administered for the pilot study

Data analysis

Data were analysed using simple descriptive analysis. For the Likert scale, mean weighted values were used to determine the extent to which a respondent strongly agrees or agrees with a statement. The indexes for the five scales Likert used are 1.0 – 1.49, which implies strongly disagree, 1.50 – 2.49 represented disagree, and neutrality was represented with an index of 2.50 – 3.49. Agree and strongly agree are represented with indexes of 3.50 – 4.49 and 4.50 – 5.0, respectively.

Ethical consideration

The respondents were assured of anonymity, and the details of the respondents collected were not published. The data collected for this study were basically for research purposes.

Results and Discussion

Socio-economic characteristics of boda boda riders in Dar es Salaam

The socio-economic characteristics of the respondents are presented in Table 1. The survey revealed that 77%

of the respondents were between 18 and 45 years of age, which constitutes the highest age bracket in the study area, indicating that more young men are involved in Boda Boda taxis in Dar es Salaam. The involvement of more youths in Boda Boda Taxi was due to the fact that Boda Boda Taxi provides employment and is adjudged viable because of the profit derived from the business. This opinion was also shared by Bishop (2015) and Luvinga (2021), who opined that the Boda Boda Taxi is an alternative employment opportunity for youths in Tanzania amidst the rising unemployment, and the business’s profit also attracts youth engagement to meet their livelihood. The survey reveals that only the males (100%) were engaged in the Boda Boda Taxi business in Dar es Salaam. The marital status of the respondents revealed that a high proportion (57%) of the respondents were married. The level of Education of the respondents reveals that 50% of the respondents had primary school certificates, while 43% and 7% of them had secondary and tertiary school certificates, respectively. The educational level of the Boda Boda rider suggests that the majority of the Boda Boda operators in Dar es Salaam had a low level of education. This finding was affirmed by Bippa (2023), who believed that youths are gradually dropping out of school in Tanzania to start a Boda Boda Taxi business to earn a living. The study revealed that only 7% of the Boda Boda operators had tertiary education certificates from the University or Vocational training. The 7% of the respondents with tertiary education certificates who engaged in Boda Boda business can be attributed to their inability to secure employment in the public and private sectors, an opinion that was shared by Bakari *et al.* (2023). Since the Boda Boda taxi business is perceived to be a sector alleviating unemployment among youths in Tanzania, the youth with tertiary education certificates opted to do the Boda Boda taxi business as a livelihood (Bakari *et al.*, 2023). The monthly income of the sampled respondents ranges between 200,000 – 512,000 Tanzanian shillings (TZS), equivalent to 82 USD and 213 USD, respectively, as of December 2024. The mean monthly income of the respondents was 381,667 TZS.

The daily hours of operation of Boda Boda operators in Dar es Salaam were between 11 to 18 hours daily. The study revealed that more (53%) Boda Boda riders operate between 11 – 14 hours daily; in exceptional cases, 47% operate between 15 – 18 hours daily. The mean hours of operation of the Boda Boda riders were 15, with a standard deviation of 1.81 (Table 1).

Table 1: Socio-Economic Characteristics of the Respondents

	Options	Number	Percentage
Age of Respondents N=30	18 – 45years	23	77
	Above 45years	7	23
Gender of Respondents N=30	Male	30	100
	Female	-	-
Marital Status N=30	Married	17	57
	Single	5	17
	Separated	7	23
	Widower	1	3
Level of Education N=30	Primary	15	50
	Secondary	13	43
	Tertiary	2	7
Monthly Income N=30	200,000 – 300,000	6	20
	320,000 – 400,000	14	47
	Above 400,000	10	33
Hours of Operation N=30	11 – 14	16	53
	15 – 18	14	47

The cross-tabulation between the presence of Boda Boda training facilities and training received before the commencement of Boda Boda operation revealed that a significant number (87%) of the Boda Boda operatives in Dar es Salaam were aware of the training facilities and trainings exercises organised by different agencies (Tanzanian police, Red Cross Society, Tanzania Breweries and Transaid) in Dar es Salaam to ensure safety and raise professional drivers who will uphold traffic standards (Tanzania Red Cross Society, 2024; Rettie & Barber, 2015). Despite the

various training and training facilities available for Boda Boda operatives in Dar es Salaam, 67% of the Boda Boda operatives have not received any form of formal training. This assertion affirms Bishop *et al.*'s (2018) claim that Boda Boda Operators in Dar es Salaam have limited formal training. The inability of this group of Boda Boda operatives to receive training in any form can be attributed to an unwillingness to pay for the training and the scheduling of the training, which often transcends business time (Barber & Rettie, 2015). See Table 2.

Table 2: Cross-tabulation of training awareness and training received before Boda Boda Taxis Business commences

Training from the Government before commencing Boda boda Business	Training Facilities for Boda Boda operators		
	No	Yes	Total
No	4 (13%)	16 (53%)	20 (67%)
Yes	0	10 (33%)	10 (33%)
Total	4 (13)	26 (87)	30 (100%)

The frequent occurrence of Alcohol in Table 3 suggested that riding under the influence of Alcohol was a behaviour more prevalent among Boda Boda riders in Des es Salaam, as 26.67% of the Boda Boda Riders ride under the influence of alcohol. This claim was also shared by Okebiro *et al.* (2022), who asserted that drinking and riding is a behaviour that largely

occurs among Boda Boda riders in East Africa. Table 3 further revealed that only 16.67% of the respondents do not take any substances while undertaking their Boda Boda Business. This finding implies that drug abuse is a prevalent attitudinal behaviour among Boda Boda riders in Dar es Salaam.

Table 3: Substances Used by Boda Boda Riders in Dar es Salaam

Category	Frequency	Observed Probability
Alcohol	8	26.67%
Alcohol & Cigarettes	5	16.66%
None	5	16.66%
Others	7	23.33%
Gin & Others	1	3.33%
Cigarette, alcohol, Gin & Others	1	3.33%
Alcohol & Gin	1	3.33%
Cigarette, alcohol, & Gin	1	3.33%
Others & Alcohol	1	3.33%
Total	30	100

Crosstabulation between drugs taken by Boda Boda riders and the level of education revealed that education level does not immune the Boda Boda riders from drug abuse. Table 4 shows that the majority of the Boda Boda riders, irrespective of their level of

education, take one form of substance or the other. However, the number of Boda Boda riders with tertiary certificates who take drugs/other substances is less (6.6%) compared with other groups.

Table 4: Crosstabulation between the Drug/Substance taken before Riding

Substances/Drugs	Level of Education			Total
	Primary	Secondary	Tertiary	
Alcohol	5 (16.67%)	3 (10%)	0	8 (26.67%)
Alcohol & Cigarettes	2 (6.66%)	3 (10%)	0	5 (16.66%)
None	4 (13.33)	1 (3.33%)	0	5 (16.66%)
Others	3 (10%)	3 (10%)	1 (3.33%)	7 (23.33%)
Gin & Others	0	1 (3.33%)	0	1 (3.33%)
Cigarette, alcohol, Gin & Others	0	1 (3.33%)	0	1 (3.33%)
Alcohol & Gin	0	0	1 (3.33%)	1 (3.33%)
Cigarette, alcohol, & Gin	0	1 (3.33%)	0	1 (3.33%)
Others & Alcohol	1 (3.33%)	0	0	1 (3.33%)
Total	15 (50%)	13 (43.33%)	2 (6.66%)	30 (100%)

Attitudinal behaviour of boda boda riders towards safety practices

Table 5 revealed significant compliance with the use of helmets by Boda Boda riders in Dar es Salaam, as 77% of the riders were noted to comply with the use of helmets. However, the Boda Boda Association of Tanzania requires the Boda Boda riders and their passengers to wear helmets for safety measures (Bishop & Amos, 2015). The study’s finding differs from this instruction as the rider allowed 100% of the passengers to ride on the Boda Boda without wearing a helmet (See Plate 1). Studies have also shown that Boda Boda passengers often dislike using helmets

because of hygiene concerns (Nyachio, 2024). Using a reflective jacket by Boda Boda riders is believed to reduce the risk of traffic crashes (Nguyen, 2018). The study revealed that Boda Boda riders in Dar es Salaam have yet to fully recognise the importance of wearing reflective jackets, as only 33% of the respondents were noted to be wearing reflective Jackets. Riding on the walkways was also a habitual behaviour flaunted by the Boda Boda riders in the study area, as all the respondents (100%) affirm having driven on walkways in Dar es Salaam on different occasions (See Plate 2).



Plate 1: A passenger on a Boda Boda in Dar es Salaam without wearing a helmet



Plate 2: A Boda Boda Rider riding on a walkway along Magufuli Inter-Change, Dar es Salaam

The Guardian (2015) asserted that Boda Boda Taxis operators in Dar es Salaam do not observe traffic regulations. On the other hand, Ng'hily (2023) opined that Boda Boda taxis were responsible for all child pedestrian injuries on the roads in Dar es Salaam. Side mirrors were recognised and used as a safety measure by 63% of the Boda Boda taxi riders in Dar es Salaam, while the side mirrors of the remaining 37% of the Boda Boda riders were either broken or missing. The study further revealed that 53% of the respondents have driving permits, while 47% of the Boda Boda drivers do not have driving permits. This finding does not conform to the guidelines of the Surface and Marine Transport Regulatory Authority [SUMATRA]

(2010), which specify that all Boda Boda Riders are expected to have driving permits. The study's findings further revealed that not all the Boda Boda riders adhere to the rule that a Boda Boda should carry just one passenger. The study shows that 75% of the respondents attest to sometimes carrying more than one passenger. Kinyaga's (2017) study also affirms the attitudinal behaviour of Boda Boda riders in the usual practice of carrying more than one passenger. The author stressed that although carrying more than one passenger was in defiance of the traffic law in Tanzania, this behaviour is perpetually practised by Boda Boda riders in Dar es Salaam (Kinyaga,2017).

Table 5: Different Attitudinal Behaviour exhibited by Boda Boda Riders

Category (N30)	Yes	No
Use of Helmet by Rider	77%	23%
Use of Helmet by Passenger	-	100%
Use of Reflective Jacket	33%	67%
Riding on walkways	-	100%
Use of Side Mirror	63%	37%
Have driving permit	53%	47%
Taking more than one passenger	75%	25%

Attitudinal behaviour of boda boda riders towards overspeed

To further examine the attitudinal behaviours of Boda Boda riders towards Safety measures in Dar es Salaam, their perception towards speeding was ascertained. Table 5 expresses the extent to which the Boda Boda riders disagree or strongly agree with a statement. The table reveals that Boda Boda riders agree with the statement that they often overspeed and overtake on the wrong side of the road to save time. In

addition, overspeed was an attitudinal behaviour strongly agreed to by the Boda Boda riders when under pressure. Kalemile and Kimario (2024) believed that speeding is one of the attitudinal behaviours that makes Boda Boda riders vulnerable to road crashes in Tanzania. The overall index of 4.23 means that the respondents agree with the statements on Boda Boda riders' attitude towards speeding. This index implies that speeding is an attitudinal behaviour common among Boda Boda riders in Dar es Salaam.

Table 5: Perception of Boda Boda Riders Towards Speeding

Statement	Std. Deviation	Mean
When in a hurry, I overspeed	0.25	4.93
When in a hurry, I ride on the wrong side of the road (One-way)	0.55	4.1
When in a hurry, I overtake wrongly	0.69	3.73
Overall Index		4.23 (Agree)

Conclusion

Based on the objectives of this study, the study concludes that drug abuse was prevalent among Boda Boda riders in Dar es Salaam, irrespective of the level of their education. Though training facilities were available to train Boda Boda riders in Dar es Salaam, the willingness to participate in driving and safety training was lacking among Boda Boda riders. The study further concludes that the Boda Boda riders had little adherence to driving regulations.

To ameliorate the challenges raised in the study, the study recommends that the prohibition of the use of alcohol, drugs and other psychoactive substances by Boda Boda riders should be strictly enforced by the traffic police. There should be strict regulations enforcing adherence to safety measures (use of helmets) and the enforcement of traffic laws by the police.

Future studies on the attitudinal behaviour of Boda Boda riders should be conducted to determine how the attitudinal behaviour of Boda Boda riders influences road traffic accidents in the same selected neighbourhoods in Dar es Salaam.

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