Bodaboda Identification and Urban Crime Control in Nairobi Central Business District, Kenya

Eliud Orindo Nandi[1*], and Dr. Wilson Muna PhD[2]

[1]Postgraduate Student of Master of Arts in Public Policy and Administration of Kenyatta University

[2]Lecturer, Department of Public Policy and Administration, Kenyatta University

[*]Corresponding Author

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ABSTRACT

In as much as the bodaboda industry is thriving, employing millions of people, a source of livelihood to many and daily transactions running into millions; the sector is a hub for criminal elements and directly linked to insecurity. The riders engage in criminal activities or get paid a commission for enter or as a getaway from crime scenes. Therefore, in seeking to control urban crime, this paper focused on bodaboda identification. The theoretical foundation was based on broken window theory and the study guided by the descriptive research design. The 6 bodaboda stage managers, 24 bodaboda Sacco officials, 7 officers in-charge of police station and 60 county law enforcement officers formed the target population. There was use of stratified sampling technique as respondents were placed into groups, simple random sampling adopted in selecting respondents and purposive sampling used in getting the interviewees. Primary data was collected from semi-structured questionnaires and interview schedules and quantitative and qualitative data was obtained. Descriptive, inferential and linear regression analysis was conducted where findings showed that 25.1% variation in crime control in the Nairobi CBD was through the influence of bodaboda identification. The relationship between bodaboda identification and urban crime control was positive and significant based on regression coefficient results $\beta = 0.391$. The paper concludes that movement of the 5.5 million people in Nairobi's CBD is reliant on bodaboda transport sector. But, to maintain law and order and for the success of the region, all bodabodas must have identification that eases the tracking and monitoring of activities of the riders. The research recommended for government entities to embrace new technology in the number plates of the bodabodas for ease of identification, tracking and apprehending. The technology will also help in reporting crimes as there is still fear of visiting police stations. The identification of all bodabodas will help in security and safety of the business environment as a necessity in thriving of the central business district.

Keywords: Bodaboda Identification, Tracking codes, Registration regulations, Crime identification, Urban Crime

INTRODUCTION

There is an increase in motorbike usage across the globe and especially in low and middle-income nations, where people are using motorbike both for personal and shared transport (Opondo & Kiprop, 2018). Motorcycle use is especially common in Sothern and Eastern parts of Asian for transportation of people, goods and farm products from the farms to the markets; in India, Malaysia and many African nations; motorcycles command a large market share in the transportation sector (Nguyen, Moeinaddini, Saadi & Cools, 2024). Although motorcycles are a convenient transport mode, the industry faces socio-economic and cultural challenges that significant impact on crime levels. Chalermpong, Ratanawaraha and Anuchitchanchai (2023) shared that motorcycle transport industry allows criminals to access and escape from crime scenes, they monitor and prepare for commission of criminal activities and later monitor the response of law enforcement officers.

In some cases, increase in number of motorcycles is akin to high crime rates in urban areas; for instance, in Australia, Lakeman, Benier and Wickes (2021) reported on the increased activities of organized crimes linked to outlaw motorcycle gangs (OMGs). Urban mobility transformation was linked to increase in motorcycle taxis known as okada in Nigeria (Hussein, Mpeta & Mkoba, 2022); but they are linked to increased urban crime as shared by Munishi and Hamidu (2022) who considered how Dar Es Salaam City in Tanzania has been threatened and overrun by crime led to motorcycle riders. Additionally, Kpae and Adishi (2017) mentioned that ease of movement for the motorcycle make it a convenient tool for committing crime and Kiplagat, Ngetich and Auya (2024) found that the nature of motorcycle-related crimes including robbery with violence, robbery, assault and general theft. The security implications of motorcycle transport stem from lack of registrations, over-population of the motorcycles (Mugambi, 2021).

The bodaboda sector is a significant contributor to the local economy, providing livelihood to millions of individuals in Nairobi. It plays a central role in the Central Business District (CBD) by facilitating the easy movement of goods and people. The motorcycle transport sector employs many young people and it is a source of livelihood for many homes (Ngare, 2020), hence the need to find winning ways to manage the sector. One way of securing the sector is through bodaboda identification. Giwa and Fagbenro (2023) noted that it is a step towards formalization of the sector by ensuring all operators have licenses as an indication of their training and competency to operate. The identification allows for tracking of the operators that brings about road-rule disciple, safety and security of the motorists, the local communities and the environment. Munishi and Hamidu (2022) advocated for use of ID cards for the riders for easy identification and tracking to curb those motor-bike taxi operators engaging in criminal activities.

As part of bodaboda regulations, bodaboda identification by incorporating a tracking system and digital license that can easily identify the owner, rider and operating help can help reduce criminal activities. The outlook of Ojo and Ojewale (2019) is that crime control takes the form of prevention through regulatory controls that seek to govern the operations of motorcycle riders and abiding by the safety and standards in the transport sector. Another means of controlling crime, according to Weisburd, White, Wire and Wilson (2021) is the presence of police and other law enforcement officers and collaboration with community members. The viewpoint of Ngare (2020) is that crime control can done through legal and regulatory framework such as issuance of licenses for all motorcycles, formalization of the sector and enforcement of traffic laws. In the context of this study, crime control is defined as the strategies, policies, and tools used by authorities to prevent, trace and deal with criminal activities within the Bodaboda industry.

Statement of the problem

The bodaboda sector is at the core for a thriving Central Business District (CBD) of Nairobi by easing movement of goods and people (Kiarie, 2023). Some Ksh.180 million is collected by riders daily, but the effect is eroded by the bodaboda sector being linked to aiding and abetting crime by easing movement for criminals. The Data Repository Crime Research Centre (2019) shows that motorcycle insecurity includes causing death from dangerous riding and riding under the influence of alcohol, drugs and other substances, breaching public order, assault, theft, robberies, kidnappings and abductions. The gangs use bodabodas as a quick getaway from crime scenes, such that 71.9 percent of crimes were aided by riders who were paid on commission. Further report showed that 66.5 percent are hired as accomplices and some 61.6 percent of the passengers work with the riders to commit criminal activities. Nairobi reported the highest cases of robberies at 5.9 percent as executed by the riders and riders working in cahoots with the passengers.

The lack of regulatory framework to guide the sector, since the Motorcycle Regulations Bill (2023) is still incomplete and not passed into law by the parliament. There is also no civic education done and public participation in the formulation of the bill. Additionally, Wandera (2020) stated that lack of regulatory framework, enforcement measures and collaborative efforts has created gaps where criminal activities thrive. The use of technology for tracking bodaboda riders may raise concerns about privacy invasion. Constant monitoring might be perceived as an infringement on the personal rights of riders and passengers, especially without adequate safeguards. Furthermore, the area remains under researched as characterized by the scanty research works. In seeking to address these challenges and gaps; this paper focused on establishing how bodaboda identification affect urban crime control at the central business district in Nairobi.

Research Objective

To establish how bodaboda identification affects urban crime control in Nairobi CBD

Research Question:

What is the effect of inclusion of bodaboda identification details on crime control efforts in Nairobi CBD?

LITERATURE REVIEW

Empirical literature review

Valencia, Ramirez-Guerrero, Castañeda and Toro (2020) study was on use of automatic detection of number plates for motorcyclists by the intelligent transportation systems in Colombia for management of traffic infractions. Use of automatic detection was meant to resolve the operations of illegal motorcycle taxis that increase road accidents. The developed mobile application system helped to detect infractions and then link the photo of rider, the motorcycle plate number, date and time. The information was shared to traffic police who gave fines and through the system the police were able to control accidents. The mobile application was tested in Valledupar City and managed to capture forty transit infractions. The study use of technology helped in linking transit infractions with the motorcycle rider, hence identifying the offenders. Thus, use of technology to identify offenders helped reduce transit infractions; then the same can help in fighting urban crime.

The motorcycle taxi business is thriving in Dar Es Salaam in Tanzania and is found to be a main source of livelihood to many youths; however, it has also increased crime. The researchers Munishi and Hamidu (2022) sought to understand how urban crime implicates the livelihoods of the motorcycle taxi riders. In seeking strategies to alleviate crimes on the riders, the study adopted a qualitative research design and collected data in interviews, discussions, and observing 100 motorcycle taxi riders. The study found that urban crime had a negative impact on sustainable livelihood in terms of financial, social, physical, natural and human assets. Mitigating the urban crimes demands sharing of information on crime, use of technology such as CCTV cameras and GPRS to track and monitor the city, awareness creation and prompt response by the police. This is because the digital identification of the riders and their motorcycles made it easy to identify, monitor, track movement and report on incidences of crimes. Digital identification made traceability of riders and motorcycles easy, quick and accurate which deterred criminals.

Bagenda, Ahimbisibwe, Tusiime and Moya (2017) study was on regulation for bodaboda operators in efforts to reduce road accidents in Uganda. This was a case study of Kampala City, which is a host to millions of motorcycle riders and bodaboda transport is common transport system. The motorized transport has made movement easy to maneuver the traffic snail-up in the city, but it has been difficult to regulate the industry which has led to many accidents and even fatalities. This was a quantitative research approach and as a cross-sectional survey, the researchers collected data using structured questionnaires. The study found that there were approximately 7,200 accidents from motorcycles and the solution lies in the bodaboda associations that the riders are in within their local jurisdiction. The government policy on identification and registering all motorcycles and riders in their local associations, worked to decentralized the enforcement, monitoring and track activities of its riders.

Auko (2016) research was on the empowerment of the bodaboda industry through the use of ICT in Dagoretti North Constituency. The study sought to optimize the motorcycle transport sector to ensure efficient movement, increase income for the riders and ensure safety of the passengers and riders. The study collected data through focus group discussions and questionnaires from the bodaboda riders and customers. The findings showed that use of ICT provided a solution to challenges such as waiting time for customers, safety and crime mitigation. The study found that use of open- source android application that used the RAD architecture worked by the riders and customers downloading and using the app. This worked to reduce waiting time, there was reduction of crime and assurance of safety of the customer, the rider and motorcycle because all parties were registered on the app. It was also easy to track the movement of each rider and this cut down on incidences of crime which ensured safety in the sector.

Theoretical literature review

Broken Window Theory

It was proposed by Wilson and Kelling (1982) and states that visible signs of disorder and neglect in a community lead to an increase in crime and antisocial behavior. The disorder and major crimes stem from unattended small crimes such as littering and graffiti writings, implying a lack of social control and concern for safety (Bell, 2019). The law enforcement agencies should take action and responsibility in dealing with the small crimes to forestall serious crimes. Welsh, Braga and Bruinsma (2015) share that taking a proactive approach to policing and precautionary measures such as community policing strategies, cooperation between law enforcement and citizens and safety and safety mindedness in neighborhoods; in control crimes and criminal activities. The cautionary approach led to zero-tolerance policing in New York City in the 1990s and by dealing with minor offenses there was a decrease in the crime rate (Ren, Zhao & He, 2019).

However, the theory's approach was criticized for likely causing bias and reducing the multi-faceted approach in fighting crime to overly check-ups and harsh treatment to neighborhoods with high crime rates, ethnic minorities and low-income residential areas or slums (Roman, 2017). Additionally, the theory has not proved a linked between disorganization and behavior of criminals and high crime rates. Some critics of the theory, advocate for comprehensive approaches in policing characterized by focusing on the root-causes of social and economic problems in communities (Jia, 2018). The theory emphasizes the essential role of community order in ensuring a safe environment but is limited in assessing the moral implications and inter-relationships that bar or encourage crimes. Alternatively, Ren et al. (2019) advocates for the theory because it acknowledges the complex connections between crime and disorder and efforts to abide by the rule of law creates a safe environment for all. In applying the theory, the law enforcement officers take proactive actions to control small and minor crimes to prevent occurrences of serious crimes and the community disintegrating into anarchy and lawlessness.

The theory explains how the community members, the motorcycle riders and its leaders can work with the police officers to mend the small crimes in an effort to prevent serious crimes. To control crimes in the central business district can be done through identification of bodabodas for ease of tracking and monitoring their activities, banding the riders as per operational area and stage can help in regulating and reporting those engaging in crimes and having a structure to engage community members and other leaders.

RESEARCH METHODOLOGY

Research Design

An ideal research design is one that enable the researcher to get information about the subject of interest (Tobi & Kampen, 2018). This study used descriptive research design, as it allowed the respondents to describe the situation and circumstances affecting bodaboda operations and link ing it to urban crime control. The study was done in Nairobi City County that hosts the central business district (CBD). Within the CBD there are seven (7) police stations and the county government whose mandate is to secure the area and offer other administrative services.

Target population, Sampling and Sample Size

The target population consisted of 7 officers in-charge of the seven police stations and police posts namely (Central police station, Kamukunji station, Parliament station, KICC station, Ngara station, Moroto police post and Lighthouse police post). Another targeted group was the 60 county law enforcement officers from the Nairobi City County Government, 6 bodaboda stage managers and 24 bodaboda Sacco officials.

Sampling is done when the targeted population is too big and a smaller portion is needed to take part in the research (Asiamah, Mensah & Oteng-Abayie, 2017. In this study, the targeted population was small and hence all the 97 formed the sample size. The respondents were placed into strata as per their function in the bodaboda transport and security sector. Simple random sampling was also used in selecting the respondents who filled the questionnaire and purposive sampling was employed in getting the OCSs who were interviewed.

Data collection instrument and procedure

A semi-structured questionnaire, with both open-ended and closed-ended questionnaire and an interview was used as instruments in this study as the main research instrument. According to Kishore, Jaswal, Kulkarni and De (2021) questionnaire is an inexpensive and easy to administer tool when gathering large volumes of data and the respondents remain anonymous. The questionnaire was filled by bodaboda stage managers, bodaboda Sacco officials and county law enforcement officers and interviews conducted to the OCSs. For data collection, the researcher got approvals and permit from the school and the government and later administered the research instruments for filling. For the interviews, the researcher booked appointments and then went to interview the OCSs while recording the information for analysis.

Data analysis and presentation

The qualitative data that was obtained from interviews with the OCSs were treated using thematic analysis, Joffe (2011) stated where the data is placed into themes and later coded as per study objectives. The quantitative data obtained from the administered questionnaires was analyzed through descriptive statistics that included frequencies, percentages, averages and standard deviation. Additionally, inferential statistics through linear regression analysis was computed to test the association between the variables.

The relationship between urban crime control and bodaboda regulation was derived from conducting multiple regression analysis. The regression formula is presented as follows:

$Y = \beta_0 + \beta_1 X_1 + \varepsilon$

Where: Y =Urban Crime Control

X_1 = Bodaboda Identification

β_0 = Constant

ε = Error term

FINDINGS

Descriptive Analysis Results

To obtain means, standard deviation, frequencies and percentages, the descriptive analysis was conducted on study data. The findings are as presented in Table 1 and 2:

Table 1: Bodaboda Identification Effect on Urban Crime

	Mean	SD	D	N	A	SA	STD. DEV
		%	%	%	%	%	
All operators have licenses obtained after completion of training	3.67	8.4	3.6	32.5	22.9	32.5	1.21
The bodaboda identification enables tracking of the riders	3.53	4.8	10.8	28.9	37.3	18	1.06
Trackers enable officials to monitor operators for safety/security of motorists	3.59	8.4	7.2	24.1	37.3	22.9	1.16
All bodaboda registration identifies the stage for operating area	3.57	9.6	6	20.5	44.6	19.3	1.15
Use of ID cards help to easy identify the riders engaging in criminal activities	3.51	7.2	13.3	24.1	32.5	22.9	1.19

Source: Research Data (2024)

In general, the respondents shared that bodaboda identification included operators getting licenses after completing trainings with aggregate means of 3.76; the identification enabled the tracking of riders with mean scores of 3.53 and monitoring of the operators at means of 3.59. The results also show that the bodaboda registration helped identify operators as per their stage with mean score of 3.57 and the IDs helped to easy identify each rider at mean scores of 3.51.

The conducted interviews noted that the interviewees shared that crack downs have been done to arrest any bodaboda motorist operating within the CBD without proper identification papers. The interviewees also shared that the police work with the county government and transport sector to train the bodaboda operators on importance of identification. The OCSs also confirmed that liaising with officials of bodaboda operators also help in ensuring all operators have the necessary identification papers. OCS 3 stated that:

"Through identification of bodabodas, the riders are aware that any involvement in crimes would results in arrest, prosecution and punishment. This is helpful in deterring criminal activities".

Table 2: Urban Crime Control

	Mean	SD	D	N	A	SA	STD. DEV
		%	%	%	%	%	
There is improvement in crime prevention by tracking down criminals	3.54	7.2	12	20.4	39.8	20.4	1.16
Monitoring bodaboda transport sector has curtailed urban crime rates	3.78	1.2	6	27.7	43.3	21.7	0.89
Effective investigation and punishment have served as a crime deterrence method	3.67	3.6	8.4	25.3	42.1	20.4	1.01
Coordinated efforts by all stakeholders has reduced crime rates in the CBD	3.46	4.8	12	31.3	34.9	16.9	1.06
Law enforcement officers help regulate the motorcycle transport sector	3.58	3.6	12	25.3	40.9	18	1.03
Community engagement networks worked to secure the CBD	3.78	3.6	7.2	22.9	39.8	26.5	1.03

Source: Research Data (2024)

The results show that at mean score of 3.54, it is possible to prevent crime by tracking down criminals. Just as Opondo and Kiprop (2018) stated that crime control initiatives including tracking criminals, enacting new laws and interactions with community, help to safeguard the communities. The study also found that curtailing and deterring urban can be done by monitoring bodaboda transport sector at means of 3.78, effectively investigating and punishing offers with means scores of 3.67 and coordination efforts of all stakeholders at means of 3.46. The regulation of the sector by law enforcement officers at mean score of 3.58 and engagement of community members worked to secure the CBD, where mean score was 3.78.

When asked about the impact of bodaboda transport sector and urban crimes, the interviewees shared that there has been an increase in crime rates within the Nairobi CBD area. OCS 3 stated that "the bodabodas were used as an escape root and police officers are unable to successfully pursue and arrest the perpetrators due to congestion and traffic jams." The bodaboda operators in some incidences are involved in criminal activities or working with criminals as they aid in carrying stolen goods, gathering information and sharing with the criminals before executing the crime. The bodaboda riders' swift movement helps in meandering the busy streets to evade arrest, and this has accounted to the high number of crimes commitment with help from operators in the bodaboda transport sector.

Inferential Statistics Results

The study conducted inferential statistics that consisted of test of normality, linearity, and regression analysis. Table 3 and 4 provide responses on normality and linearity tests:

Table 3: Test of Normality

	Shapiro-Wilk		
	Statistic	**df**	**Sig.**
Urban Crime Control	.826	6	.195
Bodaboda Identification	.962	5	.177

Source: Research Data (2024)

The Shapiro-Wilk Test was conducted to check normality of the spread of the data in testing the relationship between the independent and dependent variables. The threshold set 0.05 and p-values of higher value imply normally distributed data (Das, & Imon, 2016). Since the results of p-values were greater than 0.05, implying the data was normally distributed

Table 4: Test of Linearity

		Urban Crime Control
Bodaboda Identification	Pearson Correlation	.748*
	Sig. (2-tailed)	.017
	N	83

Source: Research Data (2024)

The assumptions of linearity were tested using Pearson Moment correlation, as a confirmation if the association between the dependent variable on independent variables, is linear or not. The results of bodaboda identification at 0.748 was positive and significant, because the p-values do not exceed the standard set at 0.05. Thus, the slope of the regression lines was significant; this implies linearity test was not violated.

Linear Regression Analysis Results

In order to establish the variation amount of urban crime control in Nairobi's CBD, as influenced by bodaboda identification, the linear regression analysis was conducted. The conducted tests included model summary, analysis of variance test and beta coefficient with results presented in Table 5, 6 and 7

Table 5: Model Summary

Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	.501[a]	.251	.202	.821565

Predictors: (Constant), Bodaboda Identification

The results showed that R =0.501 implying presence of direct association between bodaboda identification and urban crime control. The R^2 =0.251 indicate that 25.1% change in crime control in Nairobi CBD was attributed to bodaboda identification efforts.

Table 6: Analysis of Variance for Bodaboda Identification

Model		**Sum of Squares**	**Df**	**Mean Square**	**F**	**Sig.**
1	Regression	12.753	1	12.753	48.137	.000[b]
	Residual	21.459	81	.265		
	Total	**34.212**	**82**			
a. Dependent Variable: Urban Crime Control						
b. Predictors: (Constant), Bodaboda Identification						

The ANOVA test results show that the regression model is fit and ideal for use in this research. This is informed by the F = 48.137 calculated at df (1, 81) and p-values at 0.000 is less than standard of 0.05. This

implies the adopted model was ideal as a predictor for how bodaboda identification affected control of crime in urban areas and the Nairobi CBD.

Table 7: Regression Coefficient of Bodaboda Identification and Urban Crime Control

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.874	.112		7.804	.000
	Bodaboda Identification	.391	.146	.548	2.678	.000
Dependent Variable: Urban Crime Control						

Source: Research Data (2024)

The regression coefficient results indicate that $\beta = 0.391$ and constant of 0.874 and p-values in both instances is 0.000 implying positive significance levels. The resultant equation is: $Y = 0.874 + 0.391X_1$, where Y is urban crime control and X_1 is bodaboda identification. These results imply that a unit increase in bodaboda identification causes 0.391-unit increment in urban crime control. Furthermore, at constant level, urban crime control at Nairobi CBD is at 0.874 units.

CONCLUSIONS AND RECOMMENDATIONS

The Nairobi CBD has a large population of about 5.5 million people, and their establishment, growth and success is determined by the capacity to control crime. Controlling and reducing criminal activities in the Nairobi CBD is poised to enhance trade, finance and successful management of administrative units. The large population numbers have created traffic jam; hence many have chosen to be pillion passengers in the bodabodas. The bodabodas while effectively aided in quick movement of its passengers. But, the use of bodaboda as a transport mode has been manipulated and converted to aiding criminals to get to or leave a crime scene. This study recognizes the integral role of bodaboda regulations when seeking to control crime in any jurisdiction and especially in high traffic jammed area such as the Nairobi central business district. Controlling crimes is effective when all bodabodas have identification that eases tracking and monitoring activities of the operators.

Therefore, in trying to make the Nairobi central business district safe for businesses to operate in and thrive, the study makes these recommendations:

i. The Nairobi City County through its transport department should ensure all the motorcycles should have a clear license plate which is linked to the owner and operator.
ii. The National Government through National Transport Safety Authority (NTSA) and the National Police Service (NPS) should work towards having all identification plates issued are registered in a digital system for ease to scanning details of owner and rider
iii. The Nairobi City County working with Saccos should follow that all number plates are linked to a digital system that can trace the owner of the motorcycle. This makes it easier to track and apprehend any perpetrators after the occurrence of incidences.
iv. The National Government and NTSA must ensure the number plates have large font for the registration plates, this will allow the general public who witness incidences to see the registration plates and report to police officers.
v. The NTSA is charged with development of number plates, and can ensure the number plates have reduced digits, from the current eight [KMFB 237J] to either a five or six digit, such as [KMF 237] for easy memorization and later reporting any incidence
vi. One the challenge in the bodaboda transport sector is the lack of regulatory framework and laws governing the sector. Therefore, this paper recommends to the national government through parliament to expedite the completion, enforcement and awareness creation of the Motorcycle Regulations Bill (2023). This will bring legality on the sector as it set operating guidelines for the sector including mandatory registration and identification.

vii. The government should set public education campaigns to educate both bodaboda riders and passengers on the benefits of identification systems. These campaigns will address privacy concerns with the use of tracking and identification technology systems through use of reliable internet connectivity, CCTV cameras, and other surveillance systems. These work to enhance public safety.

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