

Street-Level Bureaucratic Discretion and Road Safety Policy Outcomes: An Examination of Policy Instruments Prioritization by Traffic Police Officers in Nairobi, Kenya

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ABSTRACT

This paper examines the effect of street-level bureaucratic discretion on traffic offences to target for enforcement on road safety policy outcomes. It draws on freshly collected data from 864 road users, 317 traffic enforcement officers, and structural observation and accident records in Nairobi Kenya. Bureaucratic discretion is measured using the number of safety checks and arrest by traffic offence category. Indicators for policy outcomes are safety checks and arrest disaggregated by offence type. It observes that those offences mostly checked at the safety checkpoints are different from those that are frequently violated. Similar, traffic offences responsible for most accidents are different from those for which most road users are arrested. It concludes that police do not base their enforcement on either seriousness or repeatability of the offence and thus undermines road safety policy outcomes. The findings have implications on street level bureaucratic theory, road safety policymaking and implementation practice.

Keywords: Road accidents; Street-level bureaucracy; Public policy implementation; Police discretion

INTRODUCTION

The role of street-level bureaucrats in the policy process has remained a thorny issue in administrative sciences over the years. In some contexts, street-level bureaucrats have been portrayed as holding a powerless position at the bottom of the politics and administration decision-making hierarchy in others, they are viewed as loyal savants who pursue the public good even if this means bending agency regulations while in others they are seen as self-interested workers who use their discretionary powers to subvert and undermine the implementation process [1-3]. This study examines the effect of street-level bureaucratic discretion on the road safety policy implementation process. Specifically, it looks at the interplay between traffic enforcement officers' discretion over categories of traffic offences to prioritize during the implementation process on one hand, and road safety policy implementation outcomes on the other.

This paper has been motivated by the fact that annually that 1.35 million people succumb to road accidents while 50 million others suffer non-fatal injuries [4]. Traffic injuries are the main cause of deaths among children and young adults and eighth among the general population [5]. With the rising number of vehicles and motorcycles on the roads, traffic accidents are expected to become the fifth leading cause of death by 2030 [6]. Similarly, WHO has projected that over the next 20 years, these figures will increase by approximately 65%. Majority of the survivors and victims of road traffic injuries are vulnerable road users including pedestrians, cyclists and motorcyclists [4,7]. Furthermore, about 90% of these deaths occur in the developing

world. In Kenya for instance, an average of 3,000 road traffic fatalities are reported annually [8].

To cut down on the number of traffic crashes and the associated losses, several policy initiatives have been put in place. In March 2010 the United Nations (UN) general assembly proclaimed 2011-2020 as the decade of action for road safety, and proposed a plan of action which has been adopted by 175 countries [9]. Most of the UN member states have developed legal frameworks, with 140 members having crafted national strategies for road safety, and 132 having set aside budgets for financing these strategies. Moreover, 161 member states, including Kenya, have set up implementing agencies to coordinate road safety policymaking and implementation processes. Kenya established the National Transport and Safety Authority (NTSA) in 2012 to coordinate the implementation of road safety policies.

In Kenya however, the journey of road safety legislation did not start with the UN plan of action but can be traced back to independence. Over the years, 46 road safety policy legislations have been enacted in Kenya. The most notable one is legal notice No.161 of 2003, which came to being in response to an upsurge in road accidents in 2001 and 2002. Legal notice No. 161 introduced new regulations, including requirements for public service vehicles to be fitted with speed regulators and safety belts for all passengers, as well as new rules governing the licensing of PSV drivers and conductors. In 2012, additional amendments were made to the Traffic Act to increase penalties arising from violations of traffic rules. These efforts notwithstanding, the number of traffic fatalities in Kenya has continued to increase.

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Received: August 24, 2021; **Accepted:** September 07, 2021; **Published:** September 14, 2021

Citation: Sidha Z, Magutu J, Shivachi T (2021) Street-Level Bureaucratic Discretion and Road Safety Policy Outcomes: An Examination of Policy Instruments Prioritization by Traffic Police Officers in Nairobi, Kenya. J Pol Sci Pub Aff. 9: 410.

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According to NTSA statistics there was 20% increase of accidents in 2020 from the previous year [8].

Past studies have attributed this increase to safety policy implementation failure [10,11]. Some studies have observed that road safety policy failure is to the most part associated with poor implementation [5,6,10]. Asingo and Mitula for instance have observed most traffic laws being development in Kenya are redundant and do not add any value to similar laws developed in the past [10]. The authors recommend that the government of Kenya should focus more on implementation. Similarly, Chitere and Kibua have observed that some police officers own public service vehicles which they allow to violate traffic laws with impunity [11].

These assertions are similar to those of Lipsky who avers that street-level bureaucrats employ a substantial amount of discretion in the course of their jobs and this discretion, if not checked, can undermine the policy implementation process [3]. The author also notes that street-level bureaucrats have interests of their own, which are sometimes different from those of their employers. These include the desire to make more income, reduce the risks of their jobs and make them more prestigious [1]. Similarly, Sidha conducted a cross-sectional study on the relationship between road user targeting and road safety policy implementation and observed discrepancies between road users targeted for road safety policy implementation and those responsible for the highest number of traffic injuries [12]. In this article, the authors take this discussion forward by investigating the extent to which police officers make discretionary choices on which traffic offences to target for traffic law enforcement and the effect of the same on-road safety policy outcomes.

The study contributes to the building of street-level bureaucratic theory by providing data on aspects of street-level bureaucratic discretion and administrative contexts that have not yet been examined. It also hopes to change the focus of policymakers from developing new road safety policies every time there is upsurge in road accidents, to developing policies that are easy to implement. Finally, it hopes to improve road safety policy implementation practice by establishing ways of directing street-level discretion to maximize implementation outcome.

Theoretical model and hypotheses

This study employs the Street Level Bureaucratic Theory (SLBT) which is an offshoot of Principle Agency Theory (PAT). SLBT emerged in the 1980s following an attempt by Lipsky to explain public policy failure from a bottom-up perspective [1,3]. Lipsky defines street-level bureaucrats as those frontline workers in public service who exercise a substantial amount of discretion in the course of their duties [3]. These frontline workers, according to the author, include teachers, social workers, the police and frontline workers in the criminal justice system. The author posits that these discretionary powers stem largely from the fact that resources available to execute their mandate are always inadequate to meet the demand for services offered in their departments. To cope with this problem, street-level bureaucrats normally face the dilemma of choosing who among their many clients to serve and who not to. These decisions are expected to promote the efficiency of their organizations through the use of limited organizational resources to maximize output. However, sometimes the decisions are either informed by personal biases or personal interests leading to wrong discretion [2].

In addition to the aforementioned, tasks in the bureaucracy require human interactions which cannot be standardized [1]. For instance, the Traffic Act in Kenya requires that all people within a moving

vehicle must wear safety belts. However, if there is a case of an expectant woman whose circumstances might prevent her from using the safety belt, such a scenario might put the police officer enforcing the Traffic Act in a dilemma on whether or not to arrest the woman for the traffic law violation or not. Beyond the aforementioned, according to Lipsky in most welfare departments, regulations are encyclopedic yet at the same time constantly changing [3]. Moreover, while these pieces of information are never readily available for the street-level bureaucrats in a usable manner, their caseloads tend to be high and episodic. Consequently, they base their decisions on what first comes to their minds [13].

Finally, the job performance of the street-level bureaucrats is also affected by their relationships with their clients. As Lipsky argues, that the clients in street-level bureaucracies are non-voluntary [3]. Since street-level bureaucracies provide essential services, most clients who seek these services have no alternative sources for the same services. For instance, a private police station from which victims of road rage or domestic violence can seek law enforcement services does not exist. Therefore, the clients are unable to seek for services offered by alternative service providers as would be the case, for the clients in the private sector.

In the process of reducing caseload, street-level bureaucrats ration the services of their agencies. They prioritize tasks, thus concentrating on a limited number of selected clients, cases, and solutions. In the processes of ranking tasks on which to concentrate, street-level bureaucrats prioritize those program activities that are routine as opposed to complex ones. They give priority to those program areas where the program recipients demand action as opposed to those that involve prevention, research, or outreach [1].

Beyond the above challenges and coping mechanisms, street-level bureaucrats have personal interests which are sometimes incongruent with those of the agencies they work for and those of their supervisors, "At the very least, workers have interest in minimizing danger and discomfort of the job and maximizing income and personal gratification" [3]. In the public policy implementation process, street-level bureaucrats tend to pursue their interests and only comply with organizational rules and pursue the objectives when such are backed up by sanctions [3].

SLBT has found empirical application in several studies over the last four decades. For instance, Constantinou conducted a six months participant observation of police behaviour at traffic stops in Cyprus [14]. The study observed that police decisions to stop or not to stop road users at the traffic checkpoints are determined by both legal and extra-legal consideration including racial profiling and other personal biases. These findings have been collaborated by other studies which observed that drivers' characteristics such as gender, age and demeanour greatly influence police officers' decisions first on whether stop a road user and in case she/he is found culpable of wrongdoing, arrest decisions [12,15,16]. This article moves the discussion away from service rationing based on client characteristics to a discussion on whether street-level bureaucrats prioritize certain implementation activities over others and the effects of the same on implementation outcomes. It postulates two hypotheses, namely;

- Police do not prioritize traffic offences that are frequently violated for traffic searches.
- The police do prioritize safety arrests for traffic offence responsible for the highest number of traffic accidents and fatalities.

MATERIALS AND METHODS

Bureaucratic discretion occurs at the macro and micro level. At the macro level, it refers to the latitude enjoyed by an administrative agency during the policy implementation process. At the micro-level, it denotes “a range of choice within a set of parameters that circumscribes the behavior of the individual service provider” [17]. In this article street-level bureaucratic discretion is measured in terms of the number of safety searches and arrests disaggregated by category of the traffic offence. Implementation success is measured in terms of road safety policy compliance. The indicators of policy compliance include frequency of violations and accidents.

This study draws from data collected in Nairobi city. Five main data collection methods were employed in the study, namely:

- Documents review
- Structured observation
- Questionnaire
- Focus Group Discussions (FGD)
- Key Informant Interviews (KII)

The main respondents of the study were traffic enforcement officers and road users. The multistage sampling design was employed in selecting interviewees. Each of the fourteen traffic divisions in the command area acted as a sampling cluster, from which road users and traffic enforcement officers were randomly selected. A total of 864 road users and 317 traffic enforcement officers participated in the survey. Some of the questionnaire respondents were requested to participate in FGDs to provide qualitative explanations of the quantitative data collected through the survey and structured observation. Divisional traffic enforcement officers, accident records officers, chairpersons of road users' associations were interviewed as key informants.

Descriptive and inferential statistics as used in this article have been generated through analysis of frequencies and spearman correlations between indicators of discretion and those of policy implementation outcomes. The null hypothesis is rejected if there is either a negative correlation figure or non-significant positive correlations. In subsequence, the study only fails to reject the null hypothesis if there is a significant positive correlation. Qualitative data from the FDGs and KII were thematically analysed and presented in narrative form. Delayed anti-inflammatory resetting: In older age it is necessary to consider other routes through which individuals are more likely to be exposed to prolonged and deleterious systemic inflammation. A proportion of older people, that rises with age, exhibit cellular and biochemical responses to noxious stimuli, mainly infection and trauma, that occur acutely but resolve over a more protracted time course compared to younger adults. In those individuals the initial normative elevation of IL-1, IL-6 and TNF in plasma tends to persist longer and the counter-regulatory responding rise in the anti-inflammatory cytokine interleukin-10 (IL-10) is delayed, increases slower and reaches a lower peak titer, compared to young adults. The most consistent experimental evidence for this pattern has been demonstrated with pneumococcal capsular antigen and Gram-negative endotoxin antigen, for both of which the time taken to return to surveillance immune chemical baseline in older people is about twice that of young adults, despite similar peak inflammatory cytokine titers during the acute phase of the episode. These phenomena indicate that in older subjects there is a change in anti-inflammatory counter-regulation resulting in slower re-setting of the innate immune chemical network to its baseline surveillance mode. Along with the persisting low-level

pro-inflammatory milieu outlined in an earlier paragraph, this trend to slow resolution of acute inflammation is a likely candidate for the deleterious burden from immune dysfunction that is commonplace, and possibly ubiquitous, in old age, and it will be posited later in this paper that it pre-conditions the CNS, especially in older age, to various forms of dysfunction and degeneration such as delirium and dementia respectively.

FINDINGS AND DISCUSSION

The findings of this paper are organized in terms of the dependent variable and the independent variable. Thus, the first two subsections display frequencies of violations and accidents by paired traffic offences. The last two subsections outline the frequencies of safety checks and arrests. The data from both the independent and the dependent variables are thereafter compared using spearman's test of correlations to find out if there are any correlations between frequency of violations and that of safety checks among the paired traffic offences. This is followed by a discussion the findings against theoretical and empirical literature.

Violations

Figure 1 outlines the traffic offences that are commonly violated by road users. The first set of bars is based on police ratings and the second set structural observation transcripts. The police rating ranges from a scale 1 to 10 with 10 being offence type most commonly violated. To find the internal consistency between the two data sources, a Kendal test of concordance was applied. The calculated Kendall value was $W=0.84821$. This implies a high level of consistency between the two data sources.

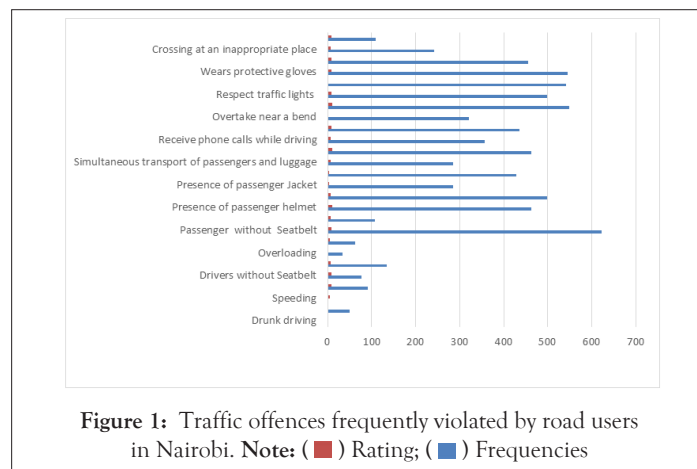


Figure 1: Traffic offences frequently violated by road users in Nairobi. Note: (■) Rating; (■) Frequencies

Table 1 shows that road users violate certain offence categories more than others. From structured observation data, the most frequently violated offence is lack of protective equipment such as helmets, gloves and safety boots among motorcyclists. However, as can be noted in Figure 1, while most of the riders wore helmets, their passengers did not. Among motorists, careless overtaking is the most frequently violated with overloading being the least violated. Lack of compliance with safety belt laws was the most frequently observed violation among passengers. Pedestrians were equally observed to be notorious for not respecting traffic lights. These observations were not radically different from the police rating of violations for traffic offences. Data from KIIs showed that the level of compliance is determined by both the ignorance of road users and the cost of shirking. Qualitative data revealed that road users are more likely to comply with policy domains which are strictly enforced while ignoring those that are not.

Table 1: Causes of accident.

Policy domain	Survey	Police records
	Frequencies	Cases
Careless riding	173	221
Losing control (particulars to be specified)	152	1019
Careless crossing (pedestrians)	113	2831
Speeding	109	1200
Overlapping/failure to keep traffic lane	101	713
Careless overtaking	77	706
Drunk driving	54	209
Use of mobile phone/Inattentive or attention diverted	30	98
Overloading	7	15
Misjudging clearance, distance or speed (vehicle or objects) speed (vehicle or objects)	0	917
Crossing at an inappropriate place	0	318

Road traffic accidents

Having established the frequency of violations as per different cause codes, the study further explored the frequency of traffic accidents per the same cause codes. Data in Table 1 were extracted from the questionnaire survey and police records. The internal consistency between the two data sources was assessed using a Kendal test of concordance. The calculated concordance coefficient was 772727273.

In general, data in Table 1 indicates that some traffic offences are more associated with high levels of accidents compared to others. Some of these include careless riding by motorcyclists and pedestrians' failure to use foot-bridges to cross busy highways. From the findings in (Tables 1 and 2) it would appear reasonable for traffic enforcement officers to target traffic offences which are commonly violated and those responsible for the highest number of accidents for enforcement. In consequence, in Table 2, the study seeks to find out if traffic enforcement officers equally enforce traffic laws.

Table 2: Domain targeting at the traffic checkpoints.

Policy domain	Survey	Observation
	Frequencies	Frequencies
Driver licence	87	181
Insurance	86	166
Alighting at the wrong place	74	125
Drunk driving	83	113
Careless overtaking	57	110
Use of mobile phone	10	78
No jacket passenger	45	70
No helmet	78	67
Passenger without helmet	75	62
Carrying more than one passenger	11	52
No jacket for riders	56	40
Vehicle defects	43	38
Overloading	29	10
Seatbelt	34	0
Speeding	86	0
Crossing while on phone	12	0
Crossing at an inappropriate place	0	0

Types of offences to target for enforcement

Traffic law enforcement involves different stages, all of which involve the use of discretion. In the first place, the officer must decide the

vehicles to stop and the ones not to. Furthermore, once a vehicle has been stopped, a decision must be made on the aspects of the Traffic Act that should be investigated. In case a road user is found to have violated any aspect of the Traffic Act, then the officer may choose to either record his findings or not. The officer also has discretion on the charges to proffer against the road users and how to frame them.

Frequency of safety checks by offence type

The second column of Table 2 outlines the paired traffic offences. The third column summarizes the frequencies of traffic checks as reported by study respondents. Finally, the fourth outlines frequency of observed safety checks per paired traffic offices. Internal consistency among the two was tested using Kendal test of concordance. The calculated concordance coefficient value is $W = \text{Kendall: } 0.776961$.

From Table 2 it is noticeable that some traffic rules are enforced more than others. Data from both observation and police records show more often than not, police officers check if a motorist owns a valid driver's license and if the vehicle is insured. Other violations frequently checked at the safety checkpoints include drunk driving, and lack of helmets, seatbelts and overlapping. On the contrary, only a small proportion of road users were either stopped: Using mobile phones while crossing the road, crossing at non-designated areas, overloading, and speeding. Scholars are divided as to whether police decisions to stop an oncoming vehicle are informed by the seriousness of the offence or personal bias [18]. Evans postulates that generally, street-level bureaucrats tend to prioritize activities that are easy to implement over those that are difficult to execute [13].

Frequency of safety arrest by offence type

A decision must, therefore, be made on the kind of offenders to arrest, those to be warned and the ones to release. To find out which type of offences often lead to arrest; road users were asked to state if they have ever been arrested and the offences which led to their arrest. This data was triangulated with that extracted from police records as presented in the table below.

Since the ranks assigned to the prevalence of traffic arrest for violation of the paired policy domains are not homogenous; a Kendall test of concordance W was conducted to find out the level of association among these ranks. The calculated concordance coefficient value is $W = 0.669096$. This indicates a high level of consistency between the two data sources. The data indicates that obstruction, failure to wear seatbelts, speeding and overloading are the offences that frequently lead to the arrest of road users. From Table 3 it is noticeable that there are variations in the number of people arrested for different offences.

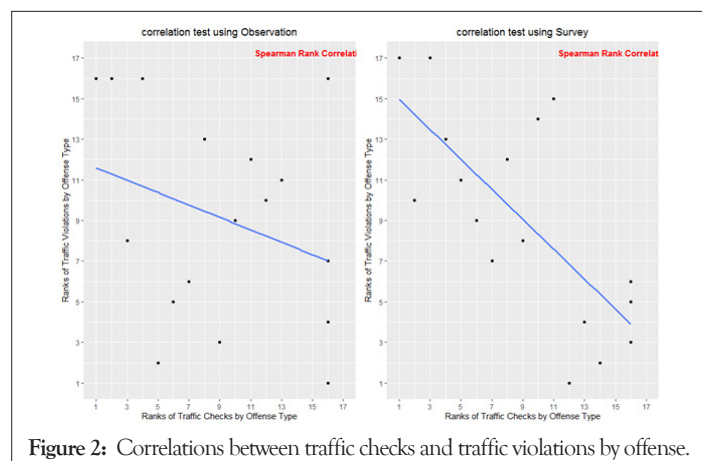
Table 3: Number of people arrested by the road policy domain.

Domain	Survey	Police Records
	Frequencies	Reported cases
Obstruction	93	6786
Wearing seat belts	56	987
Over speeding	64	689
Overloading	31	451
Use of road unworthy vehicles	18	118
Wearing reflective jackets	19	98
Driver's licence	64	89
Careless driving	0	60
Insurance	72	53
Drunk driving	52	0
Wearing helmet	20	0
Overlapping	22	0
Careless overtaking	32	0
Use of mobile phones	32	0

Different categories of the respondents had different reasons for this variation. On one hand, qualitative data from interviews with senior police officers indicate that offenders with serious offences are more likely to be arrested in comparison to those with minor ones [19-22]. On the other hand, road users believe that the police are more likely to arrest someone whose offence is easier to prove in court than those which are more difficult to prove in court. Because of the discrepancies between the views aired by senior police officers and those from road users regarding why some traffic offences are targeted for enforcement in comparison to others, a test of correlation was conducted to find out if the police target offences responsibility for the highest number of fatalities for safety arrests [23].

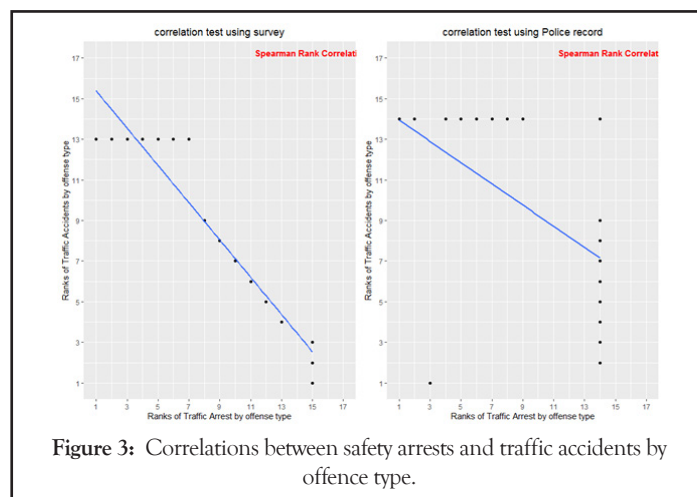
Correlations safety checks and violations by offence type

To find out if the observed relationship between aspects of the Traffic Act being targeted for road safety policy implementation and implementation outcomes, a test of correlations was done between indicators of police discretion and those of road safety policy outcomes. As pertains the relationship domain targeting and non-compliance using observation data, the observed correlation coefficient is $\rho=0.26381$. This means that 26% offences targeted by police for enforcement are different from those which are commonly violated [24]. A similar test using survey data indicated a correlations figure of $\rho=0.71789$ meaning that discrepancies between police actions and road safety policy objectives occurred 71% of the time (Figure 2). When consolidated, the data indicates that there are various aspects of the Traffic Act that are frequently violated but their compliance is rarely checked. Consequently, these actions fail to deter such traffic violations. The test of correlations is here under visualized.

**Figure 2:** Correlations between traffic checks and traffic violations by offense.

Correlations between safety arrests and traffic accidents by offence type

To maximize the scarce implementation resources, enforcement officers are expected to arrest road users based on the seriousness of the offence. Consequently, the police are expected to be stricter with offenders whose actions violate policy domains that are associated with the highest number of accidents and lenient to offenders whose offences contribute least to the RTI rate in the country. The observed correlations value is $\text{cor}=0.7452118$ for the data collected through survey and $\text{cor}=0.5217903$ for data extracted from the police records [25]. From the survey data above, it is noticeable that in 74% of the time the police arrest road users for offences that rarely cause road traffic fatalities. These data corroborate with that extracted from police records which indicates that the decision of the police on the offenders to arrest is negatively related to the number of fatalities caused by the observed offence 52% of the time. From the aforementioned, it is evident that policy decisions on the arrest of offenders are not informed by the desire to deter traffic offences that are responsible for the highest number of traffic fatalities (Figure 3).

**Figure 3:** Correlations between safety arrests and traffic accidents by offence type.

From the analysis presented above, it is noticeable that contrary to the expectation, police decisions on which road users to target for safety checks are neither dependent on the repeatability o seriousness of the offence. Thus, it confirms Lipsky's assertion that street level bureaucrats have interest of their own different from both their employers and managers. And that they also follow organizational rules if such are either in congruence with their interest or associated with sanctions [3]. The study identified a number of interests usually pursued by traffic enforcement officers during the road safety policy implementation process [26]. These include ease by which the activity can be executed, public pressure and the desire to make more income [27].

CONCLUSION

The main objective of this study was to examine the relationships between police choices over traffic offences to target enforcement and road safety policy implementation outcomes. The indicators of discretion included the frequency of traffic checks and frequency of arrest arising from various accident cause codes; while the indicators of implementation were violations and traffic injuries. Concerning whether the traffic enforcement officers exercise full enforcement, it was observed that due to the numerous types and nature of traffic rules coupled with several amendments of the Traffic Act, the enforcement officers are unable to investigate all aspects of the Act at the checkpoints. Consequently, they are forced to make choices between the policy

domains to focus on and those to ignore during implementation. Similarly, since traffic law violations happen frequently in Kenya, traffic police officers are not in a position to arrest all the traffic offenders. As a result of this, they normally make discretionary choices on the offenders to arrest and those not to target.

Ordinarily, these decisions would be informed by the need to realize maximum outcomes with the scarce resources available for implementation. If this were the case, police officers would target aspects of the Traffic Act that are commonly violated in a bid to deter road safety policy violations. However, the test of correlations between indicators of street-level discretion and the frequency of violation revealed negative correlation's. This means therefore that the police do not target those aspects of the Traffic Act which are commonly violated. In consequence, this results in the non-deterrence of such violations target. Similarly, correlations test between the severity of violations and frequency of traffic arrests resulted in a negative correlation. This means that the people who are frequently arrested are not necessarily the ones that commit serious traffic offences. This failure by police officers to target aspects of the Traffic Act responsible for the highest number of fatalities could be a contributory factor for road safety policy failure in Kenya.

Failure by street-level bureaucrats to make the correct discretionary choice can be mainly attributed to both lacks of information or conflict of interest between them and the policymakers. However, given that police traffic divisions keep an updated record of traffic injuries and their causes, it then follows that personal interests could dictate policy decisions on aspects of the Traffic Act to target for implementation. The study highlighted two of these interests as the desires to increase their income and to make their jobs more comfortable. Since the decisions for enforcement of the law was informed by considerations that were not related to the deterrence of violations of the traffic laws, then, street-level discretion over which offences to target for enforcement undermines road safety policy implementation process.

REFERENCES

1. BHupe P, Hill M, Buffat A. Understanding streetlevel bureaucracy. Bristol: Policy Press. 2015.
2. Baviskar S. Who creams? Explaining the classroom cream skimming behavior of school teachers from a street-level bureaucracy perspective. *Inter Pub Manag J*. 2018;22(3): 1559-3169.
3. Lipsky M. Street-level bureaucracy: Dilemmas of the individual in public service. New York: Russell Sage Foundation. 2010.
4. WHO. Global status report on road safety 2018. Geneva: World Health Organization. 2018.
5. Manyara CG. Combating road traffic accidents in kenya: A challenge for an emerging economy. Springer. 2016; 101-122.
6. Urie Y, Velaga NR, Maji A. A cross-sectional study of road accidents and related law enforcement efficiency for 10 countries: A gap coherence analysis, *Traffic Injury Prevention*. 2016;17(7): 686-691.
7. Theofilatos A, Yannis G, Antoniou C, Chaziris A, Sermpis D. Time Series and support vector machines to predict powered-two-wheeler accident risk and accident type propensity: A combined approach. *J Transp Saf Secur*. 2017;10(5): 1943-9970.
8. NTSA. Accident statistics report. Nairobi: NTSA. 2019.
9. UN Road Safety Collaboration. WHO. 2019.
10. Mitullah W, Asingo P. Road safety policies in Kenya: In search of explanation for non-compliance. Nairobi: Institute of Development Studies. 1-50.
11. Chitere PO, Kibua TN. Efforts to improve road safety in Kenya: Achievements and limitations of reforms in the matatu industry. Institute of Policy Analysis and Research (IPAR). 2004.
12. Sidha Z. Non-motorized transport and road safety policy implementation in Kenya. *J Pol Sci Pub Aff*. 2017;5(4): 2332-0761.
13. Evans T. Street-level bureaucracy, management and the corrupted world of service. *Eur J Soc Work*. 2015;19(5): 1468-2664.
14. Constantinou AG. "Demystifying" the police: A participant observation study of police stops (and searches). *Inter J Comp App Crimin Just*. 2015;40(1): 79-99.
15. Buvik K. The hole in the doughnut: A study of police discretion in a nightlife setting. *Pol Soc*. 2016;26(7): 771-788.
16. Alexandre AB. Perception of corruption by traffic police and taxi-drivers in Bukavu DR Congo: The limits of moral analysis. *J Contem Afr Stud*. 2018;36(4): 563-574.
17. Scott PG. Assessing determinants of bureaucratic discretion: An experiment in street-level decision making. *J Pub Admin Res Theory*. 1997;7(1): 35-58.
18. Cox SM, McCamey WP, Scaramella GL. Introduction to Policing. London: SAGE Publications. 2013.
19. Adler N, Hakkert AS, Raviv T, Sher M. The traffic police location and schedule assignment problem. *J Multi-Criteria Decis Anal*. 2014;21(5): 315-333.
20. Dempsey JS, Forst LS, Carter SB. An introduction to policing. Boston: Cengage Learning. 2018.
21. Hess KM, Orthmann CH. Introduction to law enforcement and criminal justice. Massachusetts: Cengage Learning. 2015.
22. Hill M, Möller MO. An approach to the development of comparative cross-national studies of street-level bureaucracy. *J Inter Comp Soc Pol*. 2019;35(2): 177-193.
23. Kallio J, Kouvo A. Street-level bureaucrats and the general public's deservingness perceptions of social assistance recipients in finland. *Soc Pol Admin*. 2015; 49(3): 316-334.
24. Meyers MK, Vorsanger S. Street-level bureaucrats and the implementation of the public policy. Concise Paperback Edition. 2007; 153.
25. Odera W, Khayesi M, Heda PM. Road traffic injuries in Kenya: Magnitude, causes and intervention status. *Injury Control and Safety Promotion*. 2003;10(1): 53-61.
26. Palmiotto MJ, Unnithan NP. Policing and society: A global approach. New York: Cengage Learning. 2011.
27. Road traffic injuries. WHO. 2021.