

## Multiple Streams Approach and Implementation of Road Safety Policy Measures in Kisii and Kisumu Counties, Kenya



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**ABSTRACT:** This study aimed to assess the implementation gaps in road safety policy measures in Kisii and Kisumu counties, Kenya, using the multiple streams framework. The study aimed to determine the impact of problem, policy, and politics on the implementation of road safety policy measures. A sample size of 335 was used, and interviews were conducted with traffic base commanders, county matatu owners' associations, and county directors. The reliability and validity of the study instrument were assessed using Cronbach's alpha, factor analysis, and expert opinion. Data was analyzed using descriptive and inferential statistical methods, with quantitative data examined through multilinear regression approaches and Pearson correlation analysis, and qualitative data using thematic content analysis. The findings showed a moderate influence of the multiple streams framework on the implementation of road safety policy measures among matatu operators. The study concluded that multiple streams significantly influence the implementation of road safety policy measures in Kenya.

**KEYWORDS:** Multiple Streams Approach, Implementation, road safety policy measures.

### 1.0 INTRODUCTION

Countries have implemented road safety policies to reduce accidents and injuries. However, gaps in implementation persist, especially at later stages. Effective implementation requires convergence of problem, policy, and politics streams. (Hawkins, & McCambridge, 2020). Policy studies assume that policies will be implemented once developed (Howlett, 2019), but this is not always the case in developing nations where bureaucracies and broad policies hinder their execution. (Zahariadis and Exadaktylos, 2016). Political priorities and the environment for policy implementation are often obscured by interest groups, political parties, and those affected by the policies (Jamroz, et al, 2019). Understanding the political aspects of implementation is crucial for successful policy implementation. Europe, under the Vision Zero philosophy, is a global leader in reducing road traffic deaths, but poor political good will, is associated with 93% of road traffic deaths in low- and middle-income countries (Safarpour, & Mohammadi, 2020).

Kenya has implemented various policies and intervention measures to address road safety issues (Olemo, 2016). The Integrated National Transport Policy 2009 aimed to improve accessibility to safe and secure road transportation (Isaac, 2019). The National Road Safety Council developed a five-year National Road Safety Action Plan to reduce traffic fatalities by 50% by 2014. The National Transport and Safety Authority (NTSA) was founded in 2012 to coordinate the activities of major road transport departments and reduce fatality rates from traffic accidents (Kabue, 2018). The NTSA has implemented legal, regulatory, and institutional reforms in the management of Public Service Vehicles, including registration under SACCOs for collective responsibility, driver education, testing, licensing, speed limits, drunk driving interventions, pedestrian safety projects, public awareness campaigns, and ICT solutions (Gachanja & Mose 2017). However, the implementation of these policy measures has been experiencing gaps, leading to persistent traffic accidents in Kenya.

Kenya's counties, Kisii and Kisumu, have implemented road safety policies to reduce traffic accidents. However, statistics show a rising trend in mortality and morbidity rates. Kisii County has seen an average annual increase of 7.5% in deaths and 47% in serious injuries since 2001, while Kisumu County has experienced a notable prevalence rate of accidents since 2013. In 2018, Kisumu County led with about 50% of road deaths in South Western Kenya (NTSA, 2018). Muguro, Sasaki, Matsushita, and Njeri (2020) assessed accidents data in Kenya between January 2015 and January 2020, the analysis indicted that fatalities and injuries rose by 26% and 46.5%, respectively. Besides, Kenya registered 4,347 deaths through road crashes in 2021, up from 3,707 fatalities in

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2020, representing 14.7% increase. There were 4,515 fatalities in 2022, representing about 9.6 % increase with 16,343 serious injuries up from 15,249 representing 9.3 % increase (Murkomen, 2023). The success of road safety policies in Kenya is attributed to their enactment progression (Hunter, & Peckham (2019). Studies such as Amugsi, Muindi, and Mberu 2022; Manyara 2016; Mitullah and Asingo 2014) indicate that implementation failure is a significant issue, even if the government focuses on creating new policies or amending existing ones. This study examines the implementation of road safety policies in Kenya's Kisii and Kisumu counties using a multiple-stream approach, highlighting the need for improved execution of these policies.

### **2.0 OBJECTIVES**

This study was guided by the following objectives

- i. To assess the extent to which problem stream affects the implementation of road safety policy measures in Kisii and Kisumu counties, Kenya.
- ii. To examine the extent to which policy stream affects the implementation of road safety policy measures in Kisii and Kisumu counties, Kenya.
- iii. To establish the extent to which politics stream affects the implementation of road safety policy measures in Kisii and Kisumu counties, Kenya.

### **3.0 THEORETICAL REVIEW**

#### **3.1 Multiple Streams Framework**

While Lasswell's conventional linear policy process is still in use today, John W. K. introduced the multiple streams model in 1984 (Cattaneo, 2018). This model explains how national government policies are formulated and implemented in ambiguous conditions, acknowledging three parallel but related sets of dynamic activities in any policy system: problem, policy, and political (Birkland, 2019). The multiple streams framework is a universal theory applicable to various policy subsystems globally, despite criticism from Exworthy and Powell (2004). It has been used to assess mobile hospital policies in Zambia (Kabwe, 2019), African policies (Ridde, 2009), and to address injuries caused by vehicle traffic in low- and middle-income economies (Kassam & Merali, 2019). Fowler (2019) examined the problems, politics, and policy streams in the implementation of national environmental policy in the United States. The multiple streams model was crucial to the current study in explaining the concept and implementation of road safety in light of the multiple streams model in Kenya's context, and indeed, Kisii and Kisumu counties. The theory provided insights on how road safety policy emanates through a myriad of activities, finds itself in the government's agenda setting, is translated into policy, and is eventually implemented.

#### **3.2 Punctuated Equilibrium**

The punctuated equilibrium attempts to explain why lengthy moments of relative calm are interrupted by short periods of extreme change in public policies (Baumgartner, Jones, & Mortensen, 2018). This model clarifies why governments can be transparent at times to debates and statistics that lead to changing road safety legislation and subsequent implementation, while at other times they appear to be resistant to change and only willing to make minor tweaks (Masse, 2018). The PE model was appropriate with the aim of explaining why implementation of road safety policies wavered, hence creating implementation gaps in Kisii and Kisumu counties.

### **4.0 EMPIRICAL REVIEW**

#### **4.1 Implementation of Road Safety Policy Measures**

Traffic safety is a government policy aimed at reducing the impact of road crashes on human life. It involves regulating and moderating road user behavior through preventative, persuasive, and punitive measures (Castillo et al, 2019). Traffic accidents have significant morbidity, mortality, and economic consequences (Akinyemi, 2020). The World Health Organization reports that traffic accidents kill nearly 1.35 million people globally, harm 20 to 50 million people, and negatively impact countries' GDP. The global economy is estimated to lose 3% of GDP due to traffic injuries and deaths. Iran lost 2.19% of GDP in 2019 (Yohannis, 2019); South Africa lost 3.5% of GDP in 2017 (World Bank, 2018); Ghana lost 1.6 of GDP in 2020 (Boateng, 2021); Nigeria loses 80 million Naira yearly to road accidents (Atubi, 2017); Uganda lost 5% of GDP in 2018 (WHO, 2020); and Kenya loses up to 5% of GDP to road traffic accidents (NTSA, 2020).

Road safety policy measures have a long history dating back to the early 20th century. The introduction of traffic signals in London in 1868 became a cornerstone of road safety worldwide. Speed limits were introduced in 1901, with Connecticut being the first American state to do so. Seat belt laws were introduced in the USA in 1968, and today, most countries have mandatory seatbelt

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use. Traffic laws, including DUI, reckless driving, and distracted driving, are enforced worldwide to mitigate risks. Advanced technologies like Automatic Emergency Braking (AEB), lane departure warning, and adaptive headlights have been introduced in vehicles. Road safety campaigns have been launched worldwide to encourage safe driving practices, such as the "Click It or Ticket" campaign for seat belt use, "Drive Sober or Get Pulled Over" campaign to discourage drunk driving, and "Stop, Look, and Listen" campaign to encourage pedestrian safety (Norton, 2017).

Road safety programs have gone through several stages of development throughout the years. These stages demonstrate a growing understanding of the complexity of road safety, as programs have expanded from emphasizing driver accountability alone to include systemic interventions, infrastructure upgrades, and international cooperation. Initially, in the 1950s, the focus was primarily on the responsibility of the driver. This shifted in the 1960s and 1970s towards infrastructure improvements and enhancing vehicle safety systems. The following phase, spanning the 1980s and 1990s, emphasized systemic interventions to develop action programs aimed at reducing road accidents. The fourth phase, occurring from 2011 to 2020, coincided with the United Nations' proclamation of the Decade of Action for Road Safety. During this period, a global plan was established with four pillars, with a primary emphasis on implementing road safety measures across different countries (Burlacu, Racanel, & Burlacu, 2017). Moving forward, the fifth phase, known as the United Nations Global plan, spans from 2021 to 2030. This strategy aims to halve road traffic fatalities by 2030 through collaborative efforts among all stakeholders to implement policies and initiatives (European Commission, 2021).

### **4.2 Multiple Streams Approach and Implementation of Road Safety Policy Measures**

Harris and Morris (2017) conducted a study focusing on the influence of the multiple stream approach on the outcome of the marijuana movement in Texas, USA, particularly at the grass-roots level. Despite the presence of a well-organized campaign advocating for policy change, the study revealed that political power exerted only a minimal effect on marijuana policy decisions. Factors such as conservative political influence, concerns over reelection and potential primary challenges, fear of political backlash, resistance from law enforcement entities, and prevailing perceptions within legislative bodies collectively contributed to the limited impact observed. However, the current study the current research examined political streams on the implementation and road safety policy measures in Kenya, a developing country.

Shawar, Truong, and Shiffman's 2022 study examined the rise of child sexual abuse (CSA) as a national political priority in the UK. The study used a multiple streams public policy model and found three key events that led to CSA prioritization: high-profile scandals, the reframing of CSA survivors as deserving of support, advocates creating evidence-based alternatives, and a policy window opening due to the Prime Minister's concern. Besides, Helfer (2016) conducted research on the political stream, media, and agenda setting in Switzerland using an experimental design with a quantitative approach. The study found that media attention to an issue leads to politics, with factors such as media coverage, political agenda, and election cycle playing a role. In Australia, Whiteford et al. (2016) examined how mental health was included in the 2011 Federal Policy Agenda. Results showed that socio-political factors, such as political pressure and advocacy from prominent policy entrepreneurs, shaped youth mental health initiatives.

Hoe et al. (2019) conducted a study in Turkey to understand why tobacco use is considered a serious policy problem, rather than road traffic injuries. The study used cross-case design and purposeful sampling to identify respondents. Results showed that tobacco use was put on the government's agenda due to statistics showing 44% of the population smokes. Health activists conducted workshops and courses to highlight tobacco use as a problem. On the other hand, road safety data showed a decreasing trend in deaths and injuries. On the other hand, Odonkor, Mitsotsou, and Dei (2020) conducted a study in Ghana to evaluate the impact of policy streams on road safety policies in Africa, specifically in Ghana. The study used qualitative methodology and purposeful sampling to identify participants. The findings revealed that despite six daily road deaths, road safety is not considered a policy issue due to lack of political priority and prominent policy entrepreneurs. The study aimed to understand how problem streams relate to national road safety policy development and the impact of political streams on road safety measures.

Mauti et al.'s 2019 study aimed to understand why HiAP in Kenya didn't make the government's agenda. Using a qualitative method, they found that government ministry staff were not knowledgeable about HiAP due to lack of studies and ignorance of local implementation of international declarations and policies. Despite acknowledging the impact of social and economic variables on health concerns, some interviewees believed it was insufficient. Kitheka's 2014 study examined the impact of amended traffic regulations on traffic crashes in Nairobi's transportation sector. Using mixed model design and quota sampling, the study revealed disparities in policy implementation due to lack of political good will. The study used institutional theory and Farralle's human factors theory, while the current study used multiple stream framework model and punctuated equilibrium model.

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## 5.0 METHODOLOGY

This study used a descriptive survey design with mixed methodologies to describe the association between problem stream frameworks and the implementation of road safety policy measures. Applying a mixed method approach allows triangulation of research approaches (Maarouf, 2019). The research used a descriptive survey design and pragmatic research philosophy while embracing mixed research approaches. The study utilized census, simple random sampling, and stratified random sampling, purposive sampling, and systematic random sampling techniques in drawing a representative sample. A sample size of the study was 335 of target population using Yamane’s formula where, 327 matatu operators administered questionnaire. The study interviewed 8 traffic base commanders, 2 county matatu owners’ association and 2 NTSA county directors. The study also employed both participatory and non-participatory observation to collect supplementary data. Data was analysed using descriptive and inferential statistical methods. Quantitative data was examined by means of multilinear regression approaches and Pearson correlation analysis. Hierarchical multiple regression was used to analyze the moderating variable. Qualitative data was analysed using thematic content analysis based on the derivatives from the objectives. The study then presented quantitative data using tables and figures while qualitative data was reported in continuous prose.

## 6.0 DISCUSSION AND FINDINGS

### 6.1 Descriptive Statistics

This section provided results of descriptive statistics on data obtained from respondents based on each study objective using means, and standard deviation.

#### 5.1.1 Problem Stream

**Table 5.1 Descriptive Statistics on Problem Stream**

Item	N	$\bar{x}$	SD
I obey road safety policies (such as wearing of seatbelts etc.) as a result of incidences of tragic road accidents.	327	3.73	1.185
I observe road safety policies because of protests in response to the sluggish enforcement of road safety policies.	327	3.79	1.122
I follow road safety measures when a well-known person is involved in a road accident.	327	3.64	1.240
I follow road safety policies because of the regularity with which road accidents occur.	327	3.82	1.058
I obey road safety policies because of the number fatalities	327	3.97	.899
I observe road safety policies because of the periodical data	327	3.86	1.132
Regular reviews of road safety policy make me observe road safety	327	3.86	.934
I obey road safety measures when I am given an opportunity to participate in their evaluation	327	3.52	1.230
I observe road safety policies when my opinions are considered	327	3.77	1.032
<b>Average</b>		<b>3.77</b>	<b>1.092</b>

Source: Field Data (2021)

The findings above ( $\bar{x} = 3.8069$ ,  $SD = 1.185$ ) show that protests and demonstrations arising from sluggish implementation of road safety policy measures compelled matatu operators to observe the road safety policy measures. The results of this study support Mostafa's (2021) contention that official statistics in Bangladesh showed a 25.56% increase in traffic accidents between 2016 and 2017, whereas the overall rate increased by 15.82%. In addition, on July 29, 2018, two primary school children died in a fatal accident after being struck by trucks that were being driven by unlicensed drivers, which sparked widespread outrage. The government's refusal to put road safety policy measures into action prompted students to organize protests. As a response, the government strengthened its regulations regarding road safety and began targeting unlicensed drivers. Further, this study underscores Odonkor, Mitsotsou, and Dei's (2020) proclamation that in Ghana, the public took to the streets to protest against poor coordination, inadequate funding, ineffective civil services, and corruption that occasioned the slow implementation pace of the road safety policy.

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In response to the question whether protests and demonstrations have any significant impact on the adoption of measures to improve road safety, interviewees KISO, KSMC2, and KSMC4 all agreed that they did. Regarding the same, KISO added:

Protests and demonstrations halt matatu operations, particularly if they are directed against a certain matatu Sacco or route. In most cases, public outrage influences our Saccos' behavior. Each matatu Sacco acts to ensure that road safety initiatives are followed in order to avoid backlash from the public.

KSMC2 and KSMC4 concurred, saying:

Protests and demonstrations force PSV to adhere to road safety rules. [...] If wananchi (citizens) happen to stage protests because of relaxation in enforcement of safety policies, it definitely compels us to step up vigilance to address their concerns. [...] Public pressure compels matatu operators to follow road safety rules.

The result ( $\bar{x} = 3.66$ ,  $SD = 1.240$ ) also showed that increased incidences or number of tragic road accidents prompted matatu operators to follow the laid-out policy measures. This finding corresponds with Jurecki and Jaśkiewicz (2012), who conducted a study in Poland and determined that when the number of traffic accidents in Poland grew, surpassing 50 thousand in 1990 reaching 54 thousand and 66 thousand in 1991 and over 100 in 1998, the Polish government enacted stringent measures to halt this alarming trend of accidents. Further, this study findings underscore Zhang (2021) observation that the end of January 2008, his Majesty King Abdullah II asked his administration set out a comprehensive strategy to reduce accidents and casualties in Jordan, as a result of a dramatic spike in traffic accident casualties and after a horrible bus accident on the Irbid-Amman highway. The provision of regular and accurate data on road safety is very helpful in the implementation of evidence-based policies and in monitoring progress. Road accident incidences and the number of tragic road accidents can be verified using correct data (Regmi, 2021). However, the study observed that the majority of the matatu Saccos who took part in the study lacked ICT systems and did not keep track of the number of accidents, fatalities, or injuries they had experienced (Field Notes, November 2021). Thus, this threatened effective implementation of safety policies.

Besides, the findings ( $\bar{x} = 3.64$ ,  $SD = 1.122$ ) revealed that when well-known people are involved in road accidents, matatu operators apply road safety policies more vigorously. This study substantiates Bhalla and Shotten (2019) findings that when involvement of Argentina's former President Raul Alfonsino in a near-fatal crash prompted the majority of public transport operators to implement road safety policies where public service vehicles were keen on speed limits, vehicles were well fitted with seatbelts and driver's behaviors were kept on check. This study finding is also consistent with Ombagi and Muna (2019) who conducted a study in Kenya and established that when Kibaki, the presidential candidate, was involvement in road crashes prior to the 2002 elections necessitated the reforms and subsequent implementation of Michuki rules after Kibaki won the presidency in 2002.

Opinions on whether accidents involving well-known people affected the implementation of road safety measures varied among interviewees KSMO and KISC2. While KISC2 disagreed, KSMO agreed that such accidents prompt people to follow traffic safety policies. KSMO illustrated his point thus:

If a matatu vehicle from Sacco X causes a traffic accident involving a prominent person's car, other Saccos will undoubtedly become more attentive to road safety laws [...] For example, a PSV driver from our county stopped and dropped a passenger at the wrong side of the road. That passenger dashed to cross the Maai Mahiu Road oblivious to the presence of an oncoming vehicle. A Governor's car which happened to be following the matatu then hit the passenger who had disembarked the matatu. The matatu sped away from the scene of the accident, but do you know what happened next? To avoid recurrence of similar tragedies, all matatus that plied that route were forced to be dropping off passengers at specified bus stops.

However, KISC2 had a contrary opinion, stating:

[...] enforcement of road safety policies is not influenced by who gets involved in an accident.

Equally, findings ( $\bar{x} = 3.86$ ,  $SD = .497$ ) showed that periodic updates on road accident occurrences provided by relevant government agencies such as NTSA and Traffic department influenced matatu operators to enforcement of road safety policy measures to a great extent. This finding corresponds to Odonkor, Mitsotsou, and Dei (2020) observation that traffic accident reporting is generally regarded as the most crucial aspect of road safety for it frequently provides significant aspects of information regarding the collision, such as how it occurred, where it occurred, and who was involved. These findings moreover underline Kingdon's MSF model premise that statistics, frequency, and fatality rate trigger policy change (Kingdon, 2003). Further, these results confirm Värnild, Larm, and Tillgren (2019) findings that deduced that when the Sweden government released yearly road accidents report, which showed an increased number of accidents, fatalities and injuries, the report prompted the government to focus on Zero Vision Policy (road safety policy philosophy). Accident records are important in enlightening the level of road safety policy implementation. (Galdino, Santana, & Ferrite, 2019).

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In addition, the study findings ( $\bar{x}=3.85$  SD = .541) showed that number fatalities and frequency or the regularity with which road accidents occur ( $\bar{x}=3.98$ , SD = .521) prompted matatu operators to obey road safety policy measures. This study findings corresponds with Muguro, Sasaki, Matsushita, and Njeri (2020), who found that fatalities and injuries increased by 26% and 46.5 percent, respectively, from January 2015 to January 2020, based on trend analysis. As a result, the Kenyan government enforced traffic rules such as introduction of a breathalyzer (alcohol blow) to detect alcohol content in drivers, and police kept a close eye on reckless driving, and excessive speeding particularly among matatu vehicles throughout the country. Besides, the UN report from 2018 on Uganda stated that the accident severity index for that country showed that 24 people died in every 100 traffic accidents and that Uganda had the highest rate of road crash fatalities in East Africa, losing 10 people per day on average. These data caught the eye of the United Nations Road Safety Performance Review for Uganda, which sought to assess Uganda's development in managing its performance in terms of road safety (UN, 2018). However, the statistics supplied did not reflect reality on the ground because the information provided was insufficient and incomplete (Field Notes, November, 2021).

The findings ( $\bar{x} = 3.86$ , SD = 0.934) further revealed that regular reviews of road safety policy measures encouraged matatu operators to observe road safety policy measures especially when they have participated in the evaluation ( $\bar{x} = 3.52$ , SD = 1.230) and their opinion taken into consideration ( $\bar{x} = 3.77$ , SD = 1.032). This finding is congruent with Vasconcellos (2013) that involving PSV crews in the evaluation of the Brazilian Transit Code (CTB) resulted in an increase in the number of public service vehicle operators adhering to road safety policy measures, resulting in a decrease in road accidents despite an increase in the size of the vehicle fleet in Brazil. This study also agrees with Nguyen, Foster, and Arnold, (2019), who conducted research in Canada and revealed that involving stakeholders (PSV operators included) in decision-making allowed them to use their information discreetly, resulting in better organizational decisions and, eventually higher organizational performance in this case operation of matatu SACCOs and PSV vehicles.

### 6.1.2 Policy Stream

**Table 5.1 Descriptive Statistics on Policy Stream**

	<b>N</b>	<b><math>\bar{x}</math></b>	<b>SD</b>
Road safety policy measures are generally acceptable	327	3.87	1.051
Road safety policy measures are easy to observe	327	3.74	1.009
Road safety policy measures are fair and impartial	327	3.53	1.041
Road safety policies have worked in other counties	327	3.62	1.083
I learn how to observe road safety measures from other counties	327	3.49	1.134
I have an opportunity of sharing about road safety measures.	327	3.74	1.063
Someone benefits when I observe road safety policy measures	327	3.51	1.264
I observe road safety measures because it is my responsibility	327	3.85	1.081
I observe road safety measures because I fear government costs (such as arrests, penalties/fines, revocation of licenses etc.)	327	3.08	1.378
<b>Average</b>		<b>3.60</b>	<b>1.122</b>

**Source:** Field Data (2021)

The findings ( $\bar{x} = 3.87$ , SD = 1.051) in table 4.9 showed that most matatu operators affirmed that the existing road safety policy measures were generally acceptable and easy to observe ( $\bar{x} = 3.74$ , SD = 1.009) because such policies were fair and impartial ( $\bar{x} = 3.53$ , SD = 1.041). This finding corresponds to Lindquist, Van der Heijden, Kuhlmann, and Wellstead (2021) in reference to Kingdon principles that that a policy option must meet the criteria of technical feasibility, value acceptance among policy experts, bearable costs, and political and public acceptance. These results, however, are inconsistent with those of Van den Berghe and Christie (2022), who in their study argued that policy measures in the area of road safety are not easily implemented as a result of inflated costs and/or alleged weaker public backing. The study opines that it is challenging for road users to adhere to the policies due to the limitations of mobility, the discriminatory nature of some of the rules, and biased government interventions. The respondents in Van den Berghe and Christie also mentioned that people are less aware of the need for stricter or tougher policy regulations that could affect their mode of transportation if they feel safer when utilizing a certain mode of transportation. Data from interviews showed that the existing road safety policy measures were not generally acceptable to matatu operators. This finding implied that those who had reservations on the existing road safety measures could easily and intentionally flout them, and therefore that compromised the safety of road users in general. KSMO added:

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[...] the rule that required matatu drivers and conductors to be employed on a permanent basis is not practical [...] it could reduce productivity when compared to when they are paid on a contract basis [...] Installing all the needed road safety equipment in matatus is costly, and passengers routinely mishandle seatbelts, resulting in high replacement costs. In addition, the findings ( $\bar{x} = 3.62$ ,  $SD = 1.083$ ) indicated that road safety policy measures had worked in other counties and matatu operators had an opportunity to learn experiences on what others had done ( $\bar{x} = 3.74$ ,  $SD = 1.063$ ). However, matatu operators were not committal as to whether they borrow road safety policy implementation policy experiences ( $\bar{x} = 3.49$ ,  $SD = 1.134$ ). Glaser, Bertolini, Te Brömmelstroet, Blake, and Ellingson, (2022) cite that a number of levels of government are encouraged to do policy transfer and policy learning, or practice learning from others (elsewhere). Thus, counties are more likely to emulate policy implementation experiences from others with similar policy preferences (Pacheco & Maltby, 2017). However, while Olsson and Hysing (2012) contend that individual public officials work strategically from within public administration to influence government policy and action in line with a civic engagement and value commitment, individual matatu operators lack the ability to transfer policies from other jurisdictions since they are street-level bureaucrats who do not work from within public administration, though they ensure implementation of road safety policy.

In responding to whether the current road safety policy measures were fair and impartial, responses from interview were inconsistent with those obtained from the questionnaires. The key informants felt that the existing road safety policies do not factor in the interests of people with special needs, such as passengers that are physically challenged and the aged. This finding suggested that the probability of such groups inadvertently flouting road safety measures was very high. KSMO reiterated that, saying:

The elderly and the disabled aren't taken into account by the current traffic laws. PSVs are made with seatbelts that are not suitable for some disabled people to use, considering their design. Policymakers are rather biased.

Moreover, as much as matatu operators were indifferent as to whether they observed road safety policy measures for fear of government punishment such as arrests, imposing of fines, or revocation of operating licenses ( $\bar{x} = 3.08$ ,  $SD = 1.378$ ), majority of matatu operators confirmed that they observed road safety policy measures as an obligation ( $\bar{x} = 3.85$ ,  $SD = 1.081$ ) despite the fact that majority of them believed that someone else with personal vested interests stood to benefit ( $\bar{x} = 3.51$ ,  $SD = 1.264$ ). These findings are inconsistent with the observations made by research participant who did notice that matatu operators offloaded excess passengers as they approached the police checkpoint, but then carried them back as they by passed them. This indicated that matatu operators merely observed road safety policies to avoid being arrested, fined, or having their operating licenses revoked (Observation, November 23, 2021). However, these findings validate a study conducted in Jordan by Zhang (2021) which revealed that increasing traffic enforcement and enforcing traffic laws with harsh penalties had a significant favorable influence on the implementation of road safety policies.

### 6.1.3 Politics Stream

**Table 5. 2 Descriptive Statistics on Politics Stream**

Item	N	$\bar{x}$	SD
Non-state actors (NGOs and private sector) persuade me to follow to road safety measures	327	3.42	1.195
I observe road safety policy measures when there is political stability	327	3.26	1.318
Politicians always encourage observance road safety policy measures	327	3.10	1.305
During election campaigns, political parties outline how they intend to improve enforcement of road safety policies	327	3.01	1.373
The ruling party has consistently support adherence to road safety policies through government agencies.	327	3.64	1.078
Opposition parties push for the enforcement of road safety measures	327	2.98	1.218
I observe road safety policy measures because others have said	327	2.85	1.245
I observe road safety policy measures because media said.	327	3.05	1.294
I observe road safety measures because it is a beneficial practice	327	3.88	1.086
<b>Average</b>		<b>3.21</b>	<b>1.071</b>

Source: Field Data (2021)

The findings showed that matatu operators were neutral as to whether non-state actors (NGOs and private sector) at a mean of ( $\bar{x} = 3.42$ ,  $SD = 1.195$ ) persuaded them to follow to road safety measures. Hysing (2021) argues that governments are increasingly

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using new modes of governance to persuade non-state actors to voluntarily take responsibility for societal problems because the ability of states to maintain a strong regulatory presence is being questioned due to a lack of democratic legitimacy and effectiveness. Hysing adds that the traditional command-and-control regulation is increasingly being supplemented with new modes of governance in which state actors facilitate, engage, and support these non-state actors (Dunn & Miller, 2007). According to Tomkinson (2020) private sector's inaction in implementing road safety policy measures allows governmental officials like the NTSA and NPS officers to abuse their discretion either by avoiding making decisions that will help policy implementation or delaying policy implementation, or only partially implementing policy (Gilson, 2015).

Similarly, matatu operators were neutral in their response as to whether they observed road safety policy measures when there was political stability in the county at the mean of ( $\bar{x} = 3.10$ ,  $SD = 1.305$ ). Likewise, matatu operators were indifferent as to whether politicians always encouraged them to observe road safety policy measures at the mean of ( $\bar{x} = 3.26$ ,  $SD = 1.318$ ). Kassam, & Merali (2019) highlight that political stability is predominantly required for agenda item prioritization. According to Tingvall, et al, (2022), political declarations by member states help to reduce traffic-related deaths and injuries by 50% by 2030 is a significant step toward improving road safety and fostering sustainable mobility. Political commitment and determination are crucial for long-term road accidents prevention in the realm of motor vehicle accidents (Peden et al, 2004).

On the other hand, matatu operators demonstrated that they were not sure as to whether political parties highlighted how they intended to improve implementation of road safety policy measures as priority during campaigns ( $\bar{x} = 3.01$ ,  $SD = 1.373$ ). However, the findings at the mean of ( $\bar{x} = 3.64$ ,  $SD = 1.078$ ) established that the ruling party had consistently supported implementation of road safety policy measures. These findings are corresponding with Ombagi and Muna (2019) argument that prior to 2002 general elections in Kenya, NARK committed in their manifesto to address road safety and after they won, the government released Legal Notice No. 161 of 2003, which helped to reduce road accidents by 73% after implementation (Mungai, 2019). On the contrary, in Uganda, road safety was inconsistent on political manifestos; in 2011-2015 NRM manifesto mentioned road safety as an agenda item but in the NRM's 2016-2021 manifesto road safety conspicuously missed and yet road accidents were rampant across the country (Hassam & Merali, 2019). This is assertion is congruent with Jadaan et al. (2018) that despite the rising number of people killed in traffic collisions, and road safety remained a low political priority in cities around the world.

Further, the study indicated that opposition parties have not consistently pushed for the enforcement of road safety measures at the mean of ( $\bar{x} = 2.98$ ,  $SD = 1.218$ ). These findings are incongruent with Kristianssen, Andersson, Belin, and Nilssen's (2018) findings that showed that both the opposition and the ruling party parliament supported Vision Zero (road safety policy vision) in Sweden where all parliamentary parties including opposition parties voted in favor of it except the Green Party which objected to the decision to replace the existing traffic safety objectives. Kumar (2018) contends that opposition parties in Bangladesh took the lead in promoting implementation of road safety regulations by forming road safety movements.

Additionally, majority matatu operators indicated that they obeyed road safety policy measures because they believed it was beneficial practice for everyone ( $\bar{x} = 3.88$ ,  $SD = 1.086$ ) and at a mean of ( $\bar{x} = 2.85$ ,  $SD = 1.245$ ) showed that they did not observe road safety policy measures because others had said the measures were good. These study findings agree with Oyoo, Wamalwa, and Kihara, (2022) who opines that traffic road accidents affects the socio and economic and well-being of Kenya and her citizens. This seems to cut across Africa as Verster and Fourie (2018) noted, a high number of accidents on South African roads not only cause the loss of human life and the ensuing pain, grief, and suffering but also have a detrimental impact on the socioeconomic development and general well-being of South Africans.

Matatu operators were neutral at a mean of ( $\bar{x} = 3.05$ ,  $SD = 1.294$ ) that they observed road safety policy measures because mass media said. This finding is inconsistent with Gupta, Kakar, Peden, Altieri, and Jagnoor's (2021) who observed that in India, media coverage of road traffic collisions (RTCs) influences preventive actions and plays advocating role by focusing on human stories and documenting the experiences of those injured in RTCs, which definitely ends up prompting the implementation of road safety policy measures. Conversely, Kenyan media lacked specialized initiatives to educate the public about the implementation of regulations for road safety (Amugsi, Muindi, & Mberu, 2022)

### 6.1.4 Implementation of Road Safety Policy Measures

**Table 4. 2 Descriptive Statistics on Implementation of Road safety Policies**

Item	N	$\bar{x}$	SD
I always observe PSV road safety policy measures	327	2.51	1.134
I always ensure total observance of road safety policy in the matatu	327	2.09	1.105
Posters on road safety in matatus trigger enforcement of safety rules	327	3.69	1.073



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Our matatus are always in compliance with all road safety measures.	327	3.26	1.127
Traffic police officers respond quickly when road accident occurs	327	2.42	1.024
With absence of traffic officer, I'm less likely to follow road rules.	327	4.02	1.009
Level of enforcement of road safety rules in matatu is adequate	327	2.19	.912
I am well-versed with all road safety measures	327	3.48	1.098
Passengers have role of ensuring matatu crews comply with safety rules.	327	3.82	1.122
<b>Average</b>		<b>3.20</b>	<b>1.069</b>

Source: Field Data (2021)

The findings revealed that matatu operators neither followed ( $\bar{x} = 2.51$ ,  $SD = 1.134$ ) nor encouraged passengers to observe the laid-out road safety policy measures ( $\bar{x} = 2.09$ ,  $SD = 1.105$ ). However, posters and adverts in PSV stimulated them to comply with the road safety policy measures ( $\bar{x} = 3.69$ ,  $SD = 1.073$ ) to a larger extent. These results are consistent with Oburu's (2015) assertion that the toa sauti campaign, which aimed to promote road safety in Kenya, was popular with both the general public and matatu drivers because of the emotive images and posters plastered inside the vehicles triggered enactment of road safety policies. Raynor and Mirzoev (2014) argued that matatu sector disregard road safety because it puts financial demands on drivers and produces an excessive amount of competitiveness, which leads to risky driving. However, Okwako (2017) contended that matatu crews had an obligation of ensuring passengers adhere to road safety policy measures.

The findings indicated that traffic police officers were sluggish in their response ( $\bar{x} = 2.42$ ,  $SD = 1.024$ ). The matatu crews confirmed that they could flout road safety policy measures when traffic police officers are absent from police check points ( $\bar{x} = 4.02$   $SD = 1.009$ ) lowering the level of implementation compliance ( $\bar{x} = 2.26$ ,  $SD = 1.127$ ). On traffic police sluggishness, the findings underscore Cheche and Kariuki (2017) determination that traffic police officers, at 53%, and NTSA officers, at 32%, are the biggest obstacles to the execution of policy measures for improving road safety. These findings also back up Mitullah and Asingo (2014) observation that road users only comply to traffic laws when the traffic police officers are round. As such, many traffic accidents occur at night and on weekends when traffic officers are absent from police checkpoints (NTSA (2020). Besides, Cheche and Kariuki in their study opined that 32% of matatu operators disregard safety rules when police are not at the vicinity. Sidha, Asingo, and Magutu (2021) observe that violations of road safety policies are frequent during hours of the day and/or days of the week when there is a low police presence on the roads. However, Chitere and Kibua (2012) in their findings in Nairobi, Mombasa, and Kisumu, Nakuru, Machakos, Kwale, Migori, Kakamega, Bungoma, and Kilifi revealed that matatus were likely to flout road safety policy measures at the presence of traffic policy officers.

Additionally, matatu operators, recognized that passengers took central role in compliance of the road safety policy measures ( $\bar{x} = 3.82$   $SD = 1.122$ ). the findings however showed that matatu operators ( $\bar{x} = 3.48$   $SD = 1.098$ ) were not adequately conversant with road safety policy measures as spelt out in the traffic act Cap 403 of the laws of Kenya and National Transport and Safety Authority Act, 2012 and thus, the levels of enforcement of the road safety policy measures were inadequate ( $\bar{x} = 2.19$ ,  $SD = .912$ ). This study's findings are inconsistent with those of Cheche and Kariuki (2017), who did a study in Kiambu, Kenya, and established that 80% of the operators in the matatu industry were aware of the existence of government rules on road safety. Besides, Transparency International Kenya (2018) findings opined that majority of matatu operators in Nairobi, Kiambu, Kajiado, and Machakos were conversant with Kenya traffic laws. On the awareness of existing road safety policy measures.

### 6.2 Inferential Statistics

#### 6.2.1 Correlation Analysis

The study examined the relationship between multiple streams framework and implementation of road safety policy measures conclusions by means of correlation analysis.

**Table 5. 3 Correlation matrix of matatu operators' study variables**

		Problem stream	Policy stream	Politics stream	Implementation of road safety policy measures
Problem stream	Pearson Correlation	1			
	Sig. (2-tailed)				
	N	397			
Policy stream	Pearson Correlation	.368**	1		

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	Sig. (2-tailed)	.000			
	N	397	397		
Politics stream	Pearson Correlation	.336**	.425**	1	
	Sig. (2-tailed)	.000	.000		
	N	397	397	397	
Implementation of road safety policy measures	Pearson Correlation	.119*	.372**	.335**	1
	Sig. (2-tailed)	.018	.000	.000	
	N	397	397	397	397

Source: Field Data (2021)

The findings (sig.0.018,  $\rho = 0.119$ ) showed a weak positive but statistically significant relationship between the problem stream and the implementation of road safety policy measures in Kisii and Kisumu counties. Similarly, there was a strong positive and statistically significant relationship between the political stream and the implementation of road safety policy measures (sig. = 0.000,  $\rho = 0.372$ ). Furthermore, the findings demonstrated a moderate positive but statistically significant relationship between the policy stream and the execution of road safety policy measures (sig. = 0.000,  $\rho = 0.335$ ).

### 6.2.2 Regression Analysis

The study adopted multiple linear regression to examine the influence of multiple streams on implementation of road safety policy measures. To establish this, the study used multiple linear regression model:  $Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \epsilon$  where: Y- Implementation of road safety policy measures,  $X_1$ -Problem Stream  $X_2$ -Policy Stream,  $X_3$ -Politics Streams,  $\epsilon$ -Error term.

**Table 5.4 Model Summary for Multiple Streams Framework and Implementation of Road safety Policy Measures**

	Model	R	R Square	Adjusted Square	R Std. Error of the Estimate
Matatu Operators	1	.411 <sup>a</sup>	.169	.161	.39430

Source: Field data (2021)

The results ( $R^2 = 0.169$ ) showed multiple streams framework counted for 16.9 % of variance in implementation of road safety policy measures in Kisii and Kisumu counties, leaving 83.1 % to be explained by exogenous factors. Adjusted R square was 0.012, thus the study predicted 1.2 percent influence of multiple streams on the implementation of road safety policy measures. The correlation between multiple streams framework and implementation of road safety policy measures was moderate and positive at 0.411 level implying that multiple streams framework moderately influenced implementation of road safety policy measures. These findings correspond with Ridde (2009) assertion that multiple streams framework has significant influence on the implementation of public policy and that it could be helpful in forecasting, comprehending, and explaining challenges relating to implementation of public policy and the framework can be used to predict the outcome of policy implementation (Zahariadis, 2014).

The study examined the goodness of fit of the model using ANOVA, table 5.6

**Table 5. 5 ANOVA on Multiple Streams Framework and Implementation of Road Safety Policy Measures**

	Model	Sum of Squares	df	Mean Square	F	Sig.
Matatu Operators	1 Regression	10.198	3	3.399	21.864	.000 <sup>b</sup>
	Residual	50.218	323	.155		
	Total	60.415	326			

Source: Field data (2021)

Matatu operators' data was run in SPSS and regression output showed ( $F = 1,323 = 21.864$ ,  $P = 0.000 < 0.05$ ) which indicated that model was good. It showed multiple streams predicted implementation of road safety policy measures outcomes. It is interpretable, therefore, that problem stream, policy stream, and politics stream jointly explained variance in implementation of road safety policy measures in Kisii and Kisumu counties. These findings are congruent with Ridde (2009) findings that the multiple-streams framework may be used to examine public policy implementation at the local level (decentralized units). These findings are also

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consistent with Zahariadis' (2014) claim that multiple streams framework can be used to predict the outcome of policy implementation.

In addition, the study examined the coefficients of multiple-streams framework.

**Table 5.6 Coefficients for Multiple Streams Framework and Implementation of Road Safety Policy Measures**

Model	Unstandardized Coefficients	Std. Error	Standardized Coefficients		t	Sig.	
			B	Beta			
Matatus Operators	1	(Constant)	2.008	.147		13.627	.000
		Problem stream	-.060	.041	-.088	-1.463	.145
		Policy stream	.200	.041	.310	4.849	.000
		Politics stream	.118	.034	.208	3.482	.000

**Source:** Field data (2021)

The findings demonstrate in the result ( $B = -0.060$ ,  $P=0.145 >0.05$ ) that when role of problem stream is computed alongside other variables, results thereof depict an insignificant effect on implementation of road safety policy measures. However, the findings, revealed that when policy stream is computed with other streams the findings, ( $B=.200$ ,  $P=0.000 < 0.05$ ), policy stream had significant influence on the implementation of road safety policy measures and when the politics stream is computed alongside other variables, the results ( $B=.118$ ,  $P=0.000 < 0.05$ ), revealed that politics stream had significant influence on the implementation of road safety policy measures in Kisii and Kisumu counties. Hence, the model equation is  $Y = 2.008 + -0.060 X_1 + 0.200 X_2 + 0.118 X_3$ . This implied that when problem stream increased by 1 implementation of road safety decreased by 0.060 units and when policy stream is increases by 1 unit, implementation of road safety increased by 0.200 units while when politics stream is increased by 1 unit, implementation of road safety increased by 0.118 units. Consequently, these findings suggested that the problem stream did not appeal to matatu operators in the implementation of road safety policy measures. This observation collaborates with Birkland (2019) who argued that problem stream constructs such as focusing events, statistics and feedback on points out that there is underling problem that needed to addressed but does not question the enactment of policy. On policy stream, this implied that the policy experts considered the viability, technical feasibility, congruence with social values of community members, public acceptability, and receptivity to the host people as Zahariadis (2014) proposes. Additionally, the study showed that the politics stream constructs shaped the implementation of road safety policy measures in Kisii and Kisumu counties to a greater extent. This finding is consistent with Hoe et al. (2019), observation that there was a link between political priority and results of implementing road safety policies and socio-political elements such as budgetary restrictions, has a major impact on the success or failure of public policy implementation (De Wals, Espinoza, and Béland, 2019).

### 7.0 CONCLUSION AND RECOMMENDATIONS

The study found that Problem Stream significantly influenced the implementation of road safety policy measures. Matatu operators were required to adhere to these measures if they were provided with information on focusing events, accident statistics, and opportunities to engage in road safety studies. However, Saccos, NPS, and NTSA lacked accurate accident records. To effectively implement road safety policy measures, entities responsible for enacting policies must understand Problem Stream aspects and ensure public information dissemination.

The study also concludes that existing road safety policies are generally accepted by matatu operators, but they only observe them due to fear of government punishments. They are also reluctant to learn from other peers' implementation experiences, which could be one reason why Kisii and Kisumu counties are leading in road accidents. This suggests that the policy stream has a significant impact on the implementation of road safety measures. Further, the study noted that political factors, such as party politics and public mood, significantly influenced the implementation of road safety policies, despite the survey showing that political actors rarely expressed interest in these issues.

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