



EFFECTS OF PROBLEM STREAM ON IMPLEMENTATION OF ROAD SAFETY POLICY MEASURES IN NYANZA REGION, KENYA

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ABSTRACT

This research sought to assess implementation gaps existing in the enactment of road safety policy measures in Nyanza region using problem Framework. The study was conducted to evaluate the level to which the Problem Stream affected the implementation of road safety policy measures. The research used a descriptive survey and explanatory design with pragmatic research philosophy point of view 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. The sample size of the study was 347. The study interviewed 6 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. The reliability of the study instrument was assessed using Cronbach's Alpha, while the validity was assessed using factor analysis and expert opinion. Data was analysed using descriptive and inferential statistical methods. Quantitative data was examined by means of multi-linear regression approaches and Pearson correlation analysis. Linear regression was used to analyze the moderating variable. The findings established that problem Framework influenced the implementation of motorway safety policy measures among Matatu operators to a moderate extent. The study established that the government agencies need to digitalize data on road accidents and recommended a collaborative approach between government agencies responsible for the implementation of road safety policy measures. This study concluded that Multiple Streams influence the implementation of road safety policy measures, and so there is need for all policy actors to take into account all streams whenever they intend to initiate the enactment of road safety measures. This study recommended a comparative research of the study constructs, with the inclusion of policy window and policy entrepreneurs among road safety policy measure implementers.

Key Words: Problem Streams, Policies, Implementation of the road safety

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INTRODUCTION

International organizations as well as countries have come up with a range of road safety programs to address the soaring figure of road accidents, death toll and injuries around the world (Nduhura, Alinda, Mulindwa, Wanume, & Settumba, 2021). However, global trends reveal implementation gaps for such measures (Hudson, Hunter, & Peckham, 2019), especially at the later stages of implementation (Heydari, Hickford, McIlroy, Turner, & Bachani, 2019). Public policies as Begari (2021), quoting Dye (1972), accurately states are "whatever a government decides to do or not to do." Numerous measures for improving road safety have been developed, but the problem exists at the execution level. This study attempted to figure out why implementation fails. Ideally, effective implementation of road safety policy measures occurs once problem, policy, and politics streams converge (Hawkins, & McCambridge, 2020). Research is very clear that although policies exist, compliance to the policies has become very difficult in various sectors (Chewa, Minja & Njoroge, 2022).

Problem stream component forms another pillar of road safety policy implementation (Ridde, 2009). This component is associated with the occurrence of traffic incidents that trigger government and public attention into action and feedback arising from the ability of government agencies to obtain traffic data on road accidents (Kingdon, 2003). Wismans, Skogsmo, Nilsson, Lie, Thynell, and Lindberg (2016) observe that there are situations where countries experience poor collation of data, under-reporting of accidents and inadequate data collection on the detailed circumstances surrounding incidents, which emerge from poorly organized transport reporting systems. This, for example, denies road safety a chance to appear in the political agenda list in Nigeria (Uhegbu, 2021). Similarly, inadequate data collection strategy denied road safety access to the agenda list in the Johannesburg World Summit on Sustainable Development, which was held in September 2002, (in the South Africa government), despite road

accidents continuing to be on the rise in Johannesburg (Mawonde & Togo, 2019). This situation hinders effective enactment of policies for enhancing road safety in most countries, particularly in Africa, which bear the burden of road accidents compared to countries with abundant incomes (Rosen, & Hyder, 2022).

Policy Stream is the other very significant component in the enactment of road safety policy procedures (Howlett, 2019). When it comes to policy stream, communities of policy specialists produce numerous policy concepts for policy solutions that relate with technical feasibility, conformity with the host community's political and social ideals (Zahariadis, 2007). Besides, Howlett (2019) also argues that for such policies to be accepted, they must be seen as practicable and ones that most practitioners in the field of road safety have faith in. Hupe (2019), however, believes that the government is responsible for turning the intelligible proposals into practice through her street-level bureaucrats whose preferences and behaviors influence the effectiveness of implementation of road safety policies (Zarychta, Grillos, & Andersson, 2020). Barnes and Henly (2018) observe that in South Africa, the street-level bureaucrats felt left out of the process of road safety policy change unlike in the USA where frontline officers have considerable freedom to participate in the development and execution of programs (Li, 2021). This observation agrees with Zhan and Tang's (2014) argument that where the central agencies in charge of formulating policies are not involved in implementation, this creates the prerequisite for the existence of implementation gap at local level.

Moreover, in response to issues of road safety in Kenya, the government and sector stakeholders have created policies and implemented intervention measures (Olemo, 2016). Some of these measures include, first, the Integrated National Transport Policy 2009, which called for improved access to safe and secure road transportation (Isaac, 2019); second, the National

Road Safety Council's formation, which developed a five-year National Road Safety Action Plan (2009–2014) with the goal of developing a system to halve the number of traffic fatalities by 2014 in response to the United Nations Decade of Action for Road Safety (2011–2020), according to Kabue (2018); as a result, the NTSA was set up in 2012 with the mandate to coordinate the activities of the major road transport departments and contribute to reducing road fatality rates from traffic accidents (Muchoki, 2020). Since then, the NTSA has implemented legal, regulatory, and institutional reforms in the management of Public Service Vehicles, including registration of SACCOs for collective responsibility, reforms in driver education, testing, and licensing, interventions in speed limits and speed governors, interventions in drunk driving, projects to improve pedestrian safety, public awareness campaigns, and the application of ICT solutions (Gachanja & Mose 2017). However, in Kenya gaps exist in the execution of these programs, as a result of which traffic accidents persist in the country (Lamont & Lee, 2015).

In Kenya, counties also participate in the implementation of road safety policy measures. Kisii County has enacted Kisii County Transport Act 2014. Kisumu County has ratified the Kisumu County Transport Act 2019, with the aim of reducing road traffic accidents (Kenya Law, 2021). Despite the existence of these local and national efforts aimed at addressing the road safety threat, statistics continue to show that mortality and morbidity rates in Kisii and Kisumu counties are on the rising trajectory. Osoro, Ng'ang'a, and Yitambe (2015) reveal that since 2001, Kisii County has seen an average annual increase of 7.5 percent in deaths and a 47 percent increase in serious injuries from 257 road accidents occurring yearly, while Oloo (2019) shows that since 2013, Kisumu County has experienced a notable rise in the number of accidents. NTSA (2018) reported that in the year 2018, Kisumu County led with about 50% of the

region's road deaths reported in South Western Kenya.

LITERATURE REVIEW

Implementation of Road Safety Policy Measures

Traffic safety is the manifestation of governmental policy in the realm of securing human life by eliminating or decreasing the repercussions of road crashes (World Health Organization, 2009). This could be achieved through initiating activities intended at regulating and moderating road user behavior by preventative, persuasive and punitive measures in order to effect the safe and efficient movement of traffic (Castillo, Castro, López, & Pedregal, 2019). Traffic road accidents come with both morbidity and mortality as well as economic consequences (Akinyemi, 2020). The World Health Organization (2018) observes that traffic road accidents kill nearly 1.35 million people around the world, harm an estimated 20 to 50 million people, and also impact negatively on countries' GDP. The World Health Organization has shown that road traffic injuries and deaths cost the global economy an estimated 3% of GDP. A case in point is the US, where the expense of road accidents in 2000 was \$230.6 billion (Kittelson, 2010); 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).

Numerous methods to address the effects of road accidents have been deliberated locally and internationally, the first phase having existed in the 1950s when the attention was on the responsibility of the driver (Burlacu, Racanel, & Burlacu, 2017). The second phase, which operated in the 1960s and 1970s, concentrated on initiatives on the infrastructure: drivers and vehicle systems prior to, during, and after a crash; while the third stage, which ran through the 1980s and 1990s emphasized on systemic interventions in order to develop action

programs aimed at reducing road accidents (Burlacu, Racanel, & Burlacu, 2017).

The fourth phase was in the years 2011-2020 after the UN proclaimed 2011-2020 the Decade of Action for Road Safety. The global plan for the Decade of Action for Road Safety 2011–2020 as an overall framework for activities was founded on four pillars, with the emphasis being the implementation of road safety measures in various countries (WHO, 2011). On its part, this study sought to determine gaps in the implementation of road safety policy measures in Nyanza region, focusing on Kisii and Kisumu counties in Kenya using multiple stream perspectives.

Problem Stream and the Implementation of Road Safety Policy Measures

Bhalla and Shotten (2019) did a study in Argentina on building road safety institutions in low- and middle-income countries. The study employed descriptive case study (single-case, holistic design) design using full variance and snowball sampling to identify the respondents. The study conducted interviews with key informants and also verified data with relevant records. Bhalla and Shotten discovered that a series of incidents (including a crash that killed nine children and the involvement of former President Raul Alfonsino in a near-fatal crash) had pushed road safety to the forefront of policy discussions. Subsequently, appropriate road safety institutions were created. Bhalla and Shotten (2019) examined how the Problem Stream influenced the creation of road safety agencies, whereas the current study examined the extent to which Problem Stream influenced implementation of road safety policy measures.

Wan, Wang, and Sperling (2013) conducted a study in China on the policy and politics underpinning China's medium-sized city public transportation systems, with a special focus on the Huizhou reform. The study used Kingdon's Multi-stream Model and conducted in-depth interviews with interested parties who shaped public transport policy in the study area. The study revealed that urban centers in China accounted for 52.6 percent

of the country's total population. This put pressure on public transportation, rendering it inefficient. Huizhou's transport system's inefficiencies resulted in a slew of unanticipated problems, including high fares, irregular operations, poor quality service, and high accident rates in the context of a city that had obscure decision-making mechanism and lacked systematic management and clear criteria in the creation of public transportation policy. Wan, Wang, and Sperling examined the effect of Problem stream construct on the formulation of transport policy, whereas the current study focused on the influence of Problem Stream on the implementation of road safety policy measures.

In addition, Hoe, Rodriguez, Üzümcüoğlu, and Hyder (2019) conducted a study in Turkey to establish why tobacco use was regarded as a serious policy problem but not road traffic injuries, considering the huge health and financial costs that road traffic crashes imposed on the Turkish people. The study employed cross-case design using Kingdon's Multiple Streams Framework. The study also identified respondents using purposeful sampling. Interviews, review of relevant documents, and online self-administered surveys were done. The result of the study showed that tobacco use was put on the government's agenda because of statistics that showed that 44% of the population smoked. Besides, increasing number of studies pointed out the severity of tobacco use. In addition, health activists conducted workshops, meetings, and courses to highlight tobacco use as a problem. Conversely, road safety, data showed a decreasing trend in road deaths and injuries. Hoe, Rodriguez, Üzümcüoğlu, and Hyder applied a cross-case study design to assess how the policy stream influenced tobacco and road safety to achieve political priority, but this study used a descriptive survey design to demonstrate how the problem stream determined implementation of road safety policy measures.

In South Africa, Koetlisi (2016) carried out a study that employed a qualitative approach to scrutinize hydraulic rupturing as a policy problem. The study

applied qualitative research methodology. Data was collected through documentary analysis and was analysed using qualitative thematic analysis. Respondents were identified through purposive sampling. Koetlisi demonstrates that the failure of Eskom, the state-owned firm in charge of energy delivery, to maintain its energy supply had drawn public attention due to focusing events such as complete blackouts which cost the economy USD 6.6 billion. The study showed that the shutting of mining industries triggered the attention of policymakers. While Koetlisi's study focused on problem stream and energy production using a qualitative research approach with a solely purposive sampling technique, this study examined Policy Stream's impact on implementation of road safety policy measures using various sampling techniques and mixed research methods.

Using multiple streams approach, Mauti *et al.* (2019) sought to establish why HiAP in Kenya failed to get into the government's agenda. The study used a qualitative method, which included interviewing of key informants and analysis of respective policies. The study found that government ministry staff are not knowledgeable about HiAP due to the dearth of studies on the topic and their ignorance of local implementation of international declarations and policies. The survey also found that despite the fact that the impact of social and economic variables on the main health concerns is increasingly acknowledged among stakeholders, some interviewees believed that acknowledgement was insufficient. However, Mauti, *et al.* focused on health challenges with emphasis on HiAP using qualitative approaches, whereas the current study used mixed research approach to establish the extent to which problem stream influenced enactment of road safety policy measures.

Punctuated Equilibrium Model

The Punctuated Equilibrium Model attempts to explain why lengthy moments of relative calm are interrupted by short periods of extreme change in

public policies (Baumgartner, Jones, & Mortensen, 2018). Punctuated Equilibrium Model illustrates the relationship between policy image and policy venue, as Baumgartner and Jones note. Therefore, this model helped the study establish how the public view of road safety policy is generated through the media, empirical findings (facts), values and beliefs associated with the implementation of road safety policy, and both global and local trends in road safety. According to Carney (2012), public policies address complicated issues that are typically compatible with many images. This is also true of road safety, which is compatible with health, the economy, and security. Additionally, this model helped the study comprehend the entities (venues) tasked with making decisions regarding the execution of road safety legislation (Masse, 2018).

METHODOLOGY

Research Design: Though this study mainly adopted descriptive survey design, it also employed explanatory design. Descriptive survey design facilitated the study to give accurate aspects, happenings, and circumstances on the variables (Njoroge, 2015). On its part, explanatory study design provided cause-effect connections between variables. This makes makes clear the significance, strength and direction of a link between independent and dependent variables (Kimolo, 2022, citing Cooper & Schindler, 2008).

Target Population: The target population comprises a whole collection of individuals (Mugenda & Mugenda, 2003) who share certain similar observable characteristics. This research targeted county NTSA directors, traffic police base commandants, county matatu owners' associations, matatu Sacco leaders, matatu drivers, and PSV conductors in Kisii and Kisumu counties. This population was assumed to have the necessary knowledge to provide the correct information and successfully meet the study objectives. The tabulated sample is shown below.

Table 1: Target Population

Road Safety Policy Implementers	County		Population
	Kisii	Kisumu	
NTSA County Directors	1	1	2
Traffic Police Base Commandants	2	6	8
Matatu Owners Association Chairs	1	1	2
Matatu Sacco Leaders	115	153	268
PSV Drivers	540	720	1,260
PSV Conductors	224	298	523

Sources: Regional Traffic Commandant (2020), Njagi (2019), NTSA (2020), KNBS (2019)

Sampling Techniques: This analysis sought to use census of all the 12 key respondents to determine a sample (County NTSA directors, traffic police base commandants, and county Matatu owners' association chairpersons) because each had crucial information regarding application of road safety policy measures obtained through responsibilities bestowed upon them. The Sacco management leaders were identified using purposive sampling technique, thus giving an opportunity to address gaps that could be identified from data collected from drivers and conductors. Systematic Random Sampling was used to identify matatu drivers and PSV conductors (this study assumed that each Sacco had a comprehensive separate list of their drivers and conductors). This was done by selecting the Kth case from the complete list of matatu drivers and that of conductors. This technique starts by randomly choosing the first Kth case on the list before systematically choosing the rest. Kisii and Kisumu counties were identified through purposive sampling.

Sample Size: The sample size for this study was 347. As Lakens (2022) points out, sample size comprises a portion of the populace to which the survey aimed to take a broad view conclusion. Sample size for matatu Sacco leaders, matatu drivers, and PSV conductors, was sought by means of Yamane's (1967) formula. Yamane (1967): $n = \frac{N}{1 + Ne^2}$

Where: **N** – represents target population; **n** – sample size; **e**- the margin of error (0.05).

$$\text{Thus, } n = \frac{2050}{1 + 2050(0.05^2)} = 335.$$

The study distributed the sample proportionately among various categories as indicated on Table 2 below in order to achieve proportional representation in data collection. The study employed Kim and Elam (2005) Model which he adopted from Cochran (1977).

$$n_1 = \frac{N_1}{N_0} \times s \quad \text{Where: } n_1 -$$

Proportionate sample size from the stratum, N_1 - Target Population from the stratum, N_0 - Total Target Population, s - Sample size from stratum.

Table 2: Sample Size

Strata	Category	Target Population	Sample Size
Kisii County	Sacco leaders	115	19
	PSV Drivers	540	88
	PSV conductors	224	37
Subtotal		879	
Kisumu County	Sacco leaders	153	25
	PSV Drivers	720	117
	PSV conductors	298	49
Subtotal		1 171	
Grand Total		2050	335

Source: Field Data (2021)

In addition, this study purposively identified 12 respondents who were picked through census as indicated earlier in Table 2, hence making total sample to be 347.

Data Analysis and Presentation: Data was certified for accuracy before being coded into the Statistical Package for Social Sciences (SPSS) version 25 software code book. SPSS was considered an acceptable tool for this study due to its ability to analyze and manipulate exceedingly complex data and its design for both interactive and non-interactive use (Denis, 2018). The analysis of quantitative data followed a logical sequence and was analyzed using descriptive statistics such as percentage, mean, standard deviation, and frequency. Diagnostic tests such as normality, multicollinearity, homoscedasticity and linearity were performed to check the suitability of data for regression analysis. Similarly, inferential statistical approaches were adopted to draw conclusions on MSF and the execution of road safety policy initiatives. In doing so, multilinear regression approaches were employed to examine the direct correlation between variables as Jamshidi (2018) recommends. The Pearson Moment Correlation Coefficient, as Schober and Schwarte (2018) recommends, was used to establish the strength and suitability of a linear relationship in the study variables.

To analyze the moderating effect of Policy Networks, the study used linear regression. Further, since the Multiple Stream Framework has identifiable themes (problem, policy, and politics streams) analyses of qualitative data were undertaken using thematic content analysis. This method involved breaking down interviews conducted on key respondents in terms of study objectives in order to infer a response pattern and the data obtained from observation. Thematic analysis allows detailed interpretation of respondents' opinions, knowledge, and experiences

obtained through interview (Kiger & Varpio, 2020). In this study, KISC was used to signify traffic base commanders for Kisii, while KSMC represented traffic base commanders Kisumu; KISD denoted NTSA director for Kisii, while KSMD represented NTSA director for Kisumu. KISO represented matatu owner for Kisii, and KSMO represented matatu owner for Kisumu. Then quantitative and qualitative data was presented using tables, figures, and continuous prose as necessary.

Statistical Models: Statistical models are created when constructs in a study are required to show the nature of inter-construct relationship (Gujarat, 2012). As a result, the study adopted Multiple Linear Regression to demonstrate combined relationships of all the independent variables (problem stream) and depend variable (implementation of road safety policy measures). The direct model determined was $Y = \beta_0 + \beta_1 X_1 + \epsilon$ 1

Where: Y- Implementation of road safety policy measures, β_0 – Constant, X_1 -Problem stream, $X_2 \epsilon$ - Error term, β_1 -Coefficients.

FINDINGS AND DISCUSSIONS

As Bretsch, Schaurer, and Dillman (2021) suggest, before beginning data analysis and reporting, a study should calculate the response rate. For this study, a total of three hundred and thirty-five (335) questionnaires were distributed to matatu operators, and three hundred and twenty-seven (327) questionnaires, representing 97.6 percent, were collected back, having been filled. In addition, 9 of the 12 interviews that were to be conducted— 75 percent response—were successful, while 3 (or 25%) were not. Mugenda & Mugenda (2003) opine that for data analysis and reporting, response ratio of 50 percent is sufficient, 60 percent is commendable, and 70 percent response or higher is remarkable. Thus, the 97.6 percent response of this study was apt.

Table 3: Response Rate for Questionnaires

Respondents	Questionnaires Distributed	Questionnaires Returned	Non-Response	Response (%)	Non-Response (%)
Matatu Operators	335	327	8	97.6	2.4
Interview		9	3	75	25

Source: Field Data (2021)

Descriptive Statistics

Based on each study objective, results from descriptive statistics were presented in this section using means, and standard deviation.

The research sought to gauge the extent to which Problem Stream impacted the implementation of road safety policy measures in Nyanza region, Kenya. This was done by examining Problem Stream using measures of central tendencies as shown on Table 4.

Problem Stream

Table 4: Descriptive Statistics on Problem Stream

Item	N	\bar{x}	SD
I obey road safety rules (such as wearing of seatbelts, etc.) as a result of increased incidents of tragic road accidents.	327	3.73	1.185
I observe road safety measures 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 rules because of the regularity with which road accidents occur.	327	3.98	.521
I obey road safety rules because of the number of fatalities in road crashes.	327	3.85	.541
I observe road safety rules because of the periodical data(weekly, monthly) on accidents	327	3.86	0.497
Regular reviews of road safety measures 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 rules when my opinions are considered.	327	3.77	1.032
Average		3.78	0.922

Source: Field Data (2021)

The results in the table above showed that matatu operators agreed by a mean response and standard deviation of 3.73 and 1.185 respectively that increased incidents or number of tragic road accidents prompted them to follow the laid down policy measures such as wearing of seat belts, observing speed limits, etc. Although the replies considerably varied from the mean, it is clear that increase in the incidents or number of tragic road accidents forced matatu operators to adhere to established policy measures like wearing seat belts and adhering to speed restrictions. This finding corresponds with that of Jurecki and Jaśkiewicz

(2012) who conducted a study in Poland and determined that when the number of traffic accidents in Poland grew, the Polish government enacted stringent measures to halt the alarming trend of accidents. Further, this study finding corroborates Zhang's (2021) observation that at the end of January 2008, His Majesty King Abdullah II asked his administration to set out a comprehensive strategy to reduce accidents and casualties in Jordan, following a dramatic spike in traffic accident casualties and after a horrible bus accident on the Irbid-Amman highway.

Further, the findings (mean=3.79 and SD= 1.122) indicated protests and demonstrations arising from sluggish implementation of road safety policy measures compelled matatu operators to observe the road safety measures. Even though the responses varied as shown by the standard deviation, they are nonetheless in agreement that protests and demonstrations resulting from slow implementation prompted the police to take action.

Besides, the findings (mean =3.64 and SD =1.240) confirmed that when well-known people are involved in road accidents, matatu operators apply road safety policies more vigorously. This demonstrated that the majority of matatu crews agreed with the assertion, even though individual responses marginally deviated from the average. This study corroborates Bhalla and Shotten's (2019) findings that when involvement of Argentina's former President Raul Alfonsino in a near-fatal crash was announced, it prompted the majority of public transport operators to become keen on speed limits, fitted PSV with seat belts and drivers' behavior was kept in check. This finding is consistent with Ombagi and Muna (2019) who carried out research in Kenya and determined that when Kibaki as presidential candidate was involved in a road accident prior to the 2002 election, this necessitated reforms and subsequent implementation of Michuki rules after Kibaki ascended to the high office in 2002.

In addition, the results by a 3.98 average mean and 0.521 standard deviation the responses showed that the frequency or regularity with which road accidents occur prompted matatu operators to obey road safety policy measures. This fact that the majority of matatu operators agreed with the statement was supported by the SD which showed that their responses did not differ widely from their mean. The findings of this study concurred with those of Retallack and Ostendorf (2019) who opined that highway management systems reduced the frequency of accidents caused by public service vehicles in Montreal and Southern Illinois cities;

speed limits were set and those who flouted them were punished.

The response that the number of fatalities prompted matatu operators to obey road safety policy measures had the collective mean of 3.85 and SD of 0.541. This result signposted majority of matatu operators agreed with the statement, and the SD indicated that the range of responses was fairly within the range of the mean. The study findings correspond with Muguro, Sasaki, Matsushita, and Njeri (2020), who found that when fatalities and injuries steadily increased in 2015 from 26 percent to 46.5 percent in the year 2020, the Kenyan government enforced traffic rules such as introduction of a breathalyzer (Alcoblow) and police kept a close eye on reckless driving and excessive speeding, particularly among matatu vehicles throughout the country.

The response to the assertion that periodical data on accidents makes one obey road safety rules resulted in a mean score of 3.86 and standard deviation of 0.497. This outcome suggested that the majority of matatu operators agreed with the assertion, and the SD showed that the response range fell within the range of the mean. This also suggested that data provided by relevant government agencies such as NTSA and Traffic department to a great extent influenced matatu operators to follow road safety measures. The findings correspond to Odonkor, Mitsotsou, and Dei (2020) conclusion that traffic accident reporting is generally regarded as the most crucial aspect of road safety, for it regularly provides significant information regarding accidents, details of how it occurred, where it occurred, and who was involved

The response to the assertion that regular reviews of road safety policy measures encouraged matatu operators to observe road safety measures had a mean score of 3.86 and standard deviation of 0.934. The results showed that most matatu drivers agreed with the statement and the SD indicated that the answer range was essentially within the range of the mean. This shows that the respondents were in agreement that discrepancies exist in the

current road safety policies that ought to be examined in order to achieve greater road safety. And even better, the findings suggest that to create and maintain an effective, high-quality road safety system, the involvement of matatu operators in policy change is crucial. A study conducted by Mavromatis, Laiou, Yannis, Tripodi, and Persia (2018) reveal that it's crucial to evaluate actions (policies) to ensure they yield the intended results and function as planned.

The mean of 3.52 and SD of 1.230 showed that when matatu operators are given an opportunity to participate in the evaluation of road safety policies, this triggered them to obey road safety measures. Though the SD showed that the respondents' opinion varied widely from the mean, majority of matatu operators agreed with the statement. The finding is congruent with Vasconcellos (2013) that involving PSV crews in the evaluation of the Brazilian transit code resulted in an increase in the number of public service vehicle operators adhering to road safety measures, resulting in a decrease in road accidents despite increased vehicle population in Brazil.

At the same time, the findings with the mean of 3.77 and standard deviation of 1.032 showed that matatu operators obey road safety rules when their opinion is taken into consideration. This outcome demonstrated that when matatu operators' suggestions are taken into account during the formulation of policies, they experience a sense of ownership over the policy-making process. The findings echoed Uzundu, Jamson, and Marsden (2022), and Johnson (2017) findings that taking into account the public's (matatu operators') perspective while crafting policies gives the public more desire to implement them successfully. Molokwane (2018) contends that to prevent policy execution failure, public authorities as well as those whom the policy will affect must be heavily involved. Citizen involvement in the process of establishing public policy is ingrained in the outcomes of that policy (Kamau and Mbirithi, 2021).

Implementation of Road Safety Policy Measures

The study examined the implementation of road safety policy measures in Nyanza region, Kenya, using measures of central tendencies as shown in Table 5.

Table 5: 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 measures in the matatu.	327	2.09	1.105
Posters on road safety in matatus trigger enforcement of safety rules.	327	3.69	1.073
Our matatus are always in compliance with all road safety measures.	327	2.26	1.127
Traffic police officers respond quickly when road accident occurs.	327	2.42	1.024
In the absence of a traffic officer, I'm less likely to follow road rules.	327	4.02	1.009
The 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
Average		2.94	1.067

Source: Field Data (2021)

With the mean response of 2.51 and standard deviation of 1.134, Matatu operators did not confirm or deny whether they always followed road safety measures, and again with the mean of 2.09 and standard deviation of 1.105, Matatu operators disagreed that they encouraged passengers to

observe the laid out road safety policy measures. However, with the mean of 3.69 and standard deviation of 1.073 matatu operators strongly agreed that posters and adverts in PSV stimulated them to comply with the road safety policy measures. Raynor and Mirzoev (2014) argued that

matatus disregard road safety because there are financial demands put on drivers, and this causes dangerous competition on the road, which leads to risky driving. However, Okwako (2017) contended that matatu crew had the obligation of ensuring passengers adhere to road safety policy measures.

With the mean result of 2.42 and standard deviation of 1.024, Matatu operators disagreed that traffic police officers responded speedily when road accident occurred. These results support Cheche and Kariuki's (2017) conclusion that traffic police officers—at 53%—and NTSA officers—at 32%—are the greatest impediment to the implementation of policy initiatives aimed at enhancing road safety. Similarly, Gichohi and Muna (2018) claim that despite the government's efforts to combat corruption, many police officers continue to demand bribe from PSVs and are reluctant to enforce legislation requiring the use of seatbelts and speed limits.

With a mean of 4.02 and an average standard deviation of 1.009, Matatu crew admitted that they flouted road safety policy measures when traffic police officers were absent from police check points. Accordingly, Matatu operators disagreed (with the mean of 2.26 and standard deviation of 1.127) that their vehicles were always in compliance with road safety rules. These findings validate Mitullah and Asingo (2014) observation that road users only comply with traffic laws when the traffic police officers are round. This explains why many traffic accidents occur at night and during weekends when traffic officers are absent from police checkpoints (NTSA (2020). 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 rules despite the presence of traffic policy officers.

Matatu operators' response of 3.82 and 1.122 standard deviation showed that passengers took a central role when it came to compliance with road safety measures. This findings suggested that implementation of road safety policy measures

need concerted effort from all stakeholders. This finding is congruent with Mahdi and Khaled (2022), citing Regan & Mitsopoulos (2001), who contended that passengers have the crucial responsibility of ensuring that road safety programs are implemented. These tasks include providing the driver company, alerting the driver concerning impending risks while on the road, and cautioning the driver if exceeding speed limit (Khaled, 2022).

With the mean of 3.48 and standard deviation of 1.098, Matatu operators agreed with the assertion that they were not fully 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*. These results imply that matatu operators are not properly interviewed and tested before being hired for a position. One's understanding of traffic regulations can only be ascertained through an interview. As such, this serious flaw makes it difficult to execute road safety measures effectively. However, this study's findings are inconsistent with those of Cheche and Kariuki (2017) who did a study in Kiambu, Kenya, that established that 80% of the operators in the matatu industry were acquainted with existing of road safety rules. Besides, Transparency International Kenya (2018) findings opined that majority of matatu operators in Nairobi, Kiambu, Kajiado, and Machakos were conversant with Kenya traffic laws. In support of these findings, the response of key informants revealed that training matatu operators was a challenge.

Finally, with the mean of 2.19 and standard deviation of 0.912, matatu operators disagreed with the assertion that the existing level of enforcement of the road safety policy measures was adequate. This finding suggested that inadequacy of road safety implementation gave way to increased accidents which translate into high fatality rate as well as injuries. This underscores underscores Osoro, Ng'ang'a, and Yitambe's (2015) observation that Kisii County had an average annual increase of 7.5 percent in accident-related deaths and 47 percent increase in serious injuries.

Regression Analysis

In order to show the combined link between the independent variables and the execution of road safety policy measures, this study adopted simple

regressions, since it contained one independent variable Problem streams. To interpret the SPSS outputs, the study adopted Allen, Bennett and Heritage (2018) criteria.

Table 6: Model Summary for problem streams and Implementation of Road safety Policy Measures

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.743 ^a	.717	.709	.40543

Source: Field data (2021)

The outcomes exhibited R squared of 0.717, being evidence that problem streams accounted for 71.7 % of variance in implementation of road safety policy measures (dependent variable) in Kisii and Kisumu counties, leaving 29.3 % to be explained by exogenous factors. These findings correspond with Ridde (2009) assertion that problem Streams 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). In addition, the study examined the goodness of fit of the model using ANOVA, Table 7.

Table 7: ANOVA on Problem stream and Implementation of Road Safety Policy Measures

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.078	3	2.343	12.210	.000 ^b
	Residual	52.227	323	.165		
	Total	58.305	326			

a. Dependent Variable: Implementation of road safety policy measures

b. Predictors: (Constant) Problem stream

Source: Field data (2021)

Table 8 regression result displayed a p-value (0.000) that was less than the conventional cut off of 0.05, demonstrating that the model was significant statistically. This evidence was reinforced through the F-statistic of 12.210, which is greater than the F-critical value (3,323) = 2.343 as tabulated in the F-table (appendix). In addition, the results indicate that Problem stream predicted implementation of road safety policy measures outcomes. It shows, therefore, that Problem stream explained variance in enactment of road safety policy measures in

Nyanza region. These findings are congruent with Ridde's (2009) findings that multiple streams Framework may be used to examine public policy implementation at the local level (decentralized units). These findings are also consistent with Zahariadis' (2014) claim that MSF can be used to predict the outcome of policy implementation.

In addition, the study examined the coefficients of Multiple Streams Framework.

Table 8: Coefficients for problem Streams Framework and Implementation of Road Safety Policy Measures

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	2.147	.152		14.157	.000
	Problem stream	-.022	.046	-.032	-.480	.039

Source: Field data (2021)

As demonstrated above, when Problem stream was computed alongside other variables with regression coefficient results ($\beta = -0.022$, $p=0.039<0.05$), there was a negative and significant link between Problem stream and Implementation of Road Safety Policy values. The results demonstrate that the Problem stream had effects on the adoption of policy measures for improving road safety in the counties of Kisii and Kisumu. Birkland (2018) argue that Problem stream constructs such as focusing events, statistics and feedback only points out that there is underlying problem that needs to address but that does not question the enactment of policy. Additionally, this study is consistent with Zahariadis (2014) who contended that Policy and Politics streams constructs shaped the application of road safety policy initiatives and political and policy streams continue to be the cornerstones of putting road safety regulations into action (Hoe *et al.*, 2019). Socio-political elements such as budgetary restrictions have a significant bearing on the

success or failure of the execution of public policies (De Wals, Espinoza, and Béland, 2019).

CONCLUSION AND RECOMMENDATIONS

The study concludes that Problem Stream played a significant influence in the implementation of road safety policy measures. The study concluded that the matatu operators will be compelled to adhere to road safety policy measures if they are given information on the focusing events from around the routes they operate on, given access to accident statistics, and given the chance to engage in studies on enacting road safety. However, the study noted that Saccos, NPS, and NTSA lacked accurate accident records. Thus, to ensure that road safety policy measures are implemented as effectively as possible, entities responsible for enacting such policies must have a firm understanding of the Problem Stream aspects and need for dissemination of information to the public.

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