



Academic Journal of Humanities and Social Sciences
Research

**POLICY LEARNING AND THE WICKED PROBLEM OF TRAFFIC
CONGESTION IN NAIROBI CITY COUNTY KENYA**

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Policy Learning and The Wicked Problem of Traffic Congestion in Nairobi City County Kenya

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Article History:

Published on: 28/05/2025

DOI:

<https://doi.org/10.5281/zenodo.20428724>

How to Cite: Motieri, S. O. (2025). Policy Learning and The Wicked Problem of Traffic Congestion in Nairobi City County Kenya. *Academic Journal of Humanities and Social Sciences Research*, 2(1), 1–13.

<https://doi.org/10.5281/zenodo.20428724>

Abstract:

Purpose of the Study: The study investigated the influence of policy learning on the wicked problem of traffic congestion in Nairobi City County, Kenya. Specifically, it examined how stakeholder learning, governance approaches, social interaction, experiential knowledge, and incremental policy adjustments contribute toward addressing persistent urban traffic congestion.

Methodology: The study adopted a pragmatism research philosophy and descriptive research design. Data were collected from 169 respondents selected using simple random, purposive, and stratified sampling techniques. Semi-structured questionnaires and interview schedules gathered primary data from transport stakeholders, while descriptive statistics, correlation analysis, and regression analysis were used for data interpretation.

Findings: The study established that policy learning exerted a statistically significant positive influence on the wicked problem of traffic congestion in Nairobi City County ($\beta = .284$, $t = 4.279$, $p < .001$). Stakeholder commitment, decisive governance, experiential learning, and social interaction among bureaucrats enhanced traffic congestion policy effectiveness. The findings further revealed that inadequate whole-government coordination and contradictory institutional narratives hindered effective traffic management interventions. Policy learning demonstrated a strong positive correlation with addressing traffic congestion ($r = .736$, $p < .01$). The study confirmed that institutional learning, evidence-based reviews, and incremental policy adjustments significantly improve policy responsiveness and transport governance outcomes in Nairobi City County.

Conclusion: The study concluded that policy learning is a significant determinant in addressing traffic congestion in Nairobi City County. Institutionalizing structured policy learning platforms and inter-agency knowledge-sharing mechanisms would significantly strengthen sustainable and responsive traffic congestion management interventions within Nairobi.

Keywords: *Policy Learning, Wicked Problems, Media Advocacy, Traffic Congestion, SACCOs, Matatu Welfare Association*

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1. INTRODUCTION

Background of the study

In the endeavor of trying to solve one wicked problem, it often leads to the emergence of other new forms of wicked problems. Wicked problems are social policy issues that are difficult to define, highly interconnected, and resistant to straightforward solutions (Rittel & Webber, 1973). Examples of wicked problems include terrorism, food insecurity, climate change, obesity epidemics, persistent poverty, and biodiversity loss (Head, 2019). According to Head and Alford (2015), problems such as child protection, global warming, natural disasters, and drug abuse, despite appearing familiar and manageable, frequently generate additional complexities during attempts at intervention. In many instances, the source of wicked problems can be associated with both natural processes and social developments. For example, politically stable and economically prosperous countries have increasingly experienced large inflows of refugees, thereby creating additional governance and policy challenges. Wicked problems are organizational and social occurrences that traditional and linear planning approaches fail to address effectively because of their unintended consequences and evolving nature (Rittel & Webber, 1973).

Issues that are unpredictable, open-ended, intractable, and complex are generally categorized as wicked problems (Head & Alford, 2015). The concept of wicked problems emerged from criticisms directed toward rational approaches to policy formulation that often ignored citizens' lived experiences, stakeholder values, and diverse perspectives, thereby rendering policy interventions ineffective (Peters, 2017). Interventions aimed at solving such policy problems become difficult because of inadequate goal clarity, weak coordination, and limited information sharing among actors involved. Consequently, exploring alternative approaches and understanding the nature of these issues requires prudent deliberation, collaboration, and debate in order to facilitate effective problem definition and solution-seeking processes.

Policy learning has increasingly expanded beyond the comparative political science field and now embraces multidisciplinary analytical studies involving policy change, policy actors, and governance processes (Dunlop & Radaelli, 2013). In many cases, policy learning is represented through first-order policy changes and incremental adjustments. Policy learning refers to the process through which actors utilize knowledge acquired through social interaction, experience, and analysis of societal events to update existing beliefs and policy preferences (Dunlop & Radaelli, 2018). Policy learning predominantly occurs within four major contexts: epistemic or expert-driven learning, reflexive learning, bargaining-based learning, and hierarchical learning.

In Nairobi City County, Kenya, significant carbon emissions have been linked to transport activities. Sitati et al. (2022) established that private cars, public service vehicles, light commercial vehicles, heavy goods vehicles, and motorcycles contribute significantly to greenhouse gas emissions in Nairobi. Gachanja (2015) further observed that complete eradication of traffic congestion in Nairobi is practically impossible due to financial and infrastructural limitations. Factors contributing to traffic congestion in Nairobi include poor transport planning, ineffective traffic management systems, inadequate transport infrastructure, increased vehicle ownership, and inefficient spatial land-use distribution. The severity of traffic congestion in Nairobi City County



calls for policy solutions that involve collaborative efforts among key transport stakeholders. It is from this perspective that the current study examines the influence of policy learning on the wicked problem of traffic congestion in Nairobi City County, Kenya.

Despite the growing significance of policy learning in influencing policy change and governance outcomes, little is known locally about its contribution toward solving wicked problems such as traffic congestion. Existing empirical evidence suggests that policy learning has effectively influenced policy outcomes in sectors such as environmental management, public health, education, water governance, and climate change policy. Therefore, if adequately applied within the transport sector in Nairobi City County, policy learning may significantly contribute toward reducing traffic congestion challenges. It is from this background that the current study seeks to investigate the influence of policy learning on the wicked problem of traffic congestion in Nairobi City County, Kenya.

Statement of the Problem

The presence of traffic congestion often signifies public policy failure, while its absence demonstrates effective policy implementation and planning (Downs, 2004). Traffic congestion is considered a wicked problem because it results from interconnected and seemingly straightforward factors that collectively generate persistent urban mobility challenges. In both urban and rural settings, traffic congestion remains a major social and economic challenge (Jain & Tiwari, 2017). Numerous interventions aimed at managing traffic congestion have failed to achieve desired outcomes due to inadequate policy approaches and ineffective implementation mechanisms. An efficient transport system reduces travel time and transportation costs while simultaneously enhancing economic opportunities and behavioral efficiency within urban systems (Litman, 2020).

The persistent problem of traffic congestion requires policy solutions grounded in policy learning approaches that have successfully worked in sectors such as climate change, education, environmental governance, and energy policy. However, most existing studies present limited evidence regarding the influence of policy learning on wicked policy problems. Available empirical literature largely focuses on policy-making approaches without adequately examining how policy learning influences coalition formation and transport governance in addressing traffic congestion in Nairobi City County. Consequently, the current study seeks to bridge this knowledge gap by examining the influence of policy learning on the wicked problem of traffic congestion in Nairobi City County, Kenya.

Objective of the Study

To investigate the influence of policy learning on the wicked problem of traffic congestion in Nairobi City County Kenya.

2. LITERATURE REVIEW

Policy Learning and Wicked Problem

In Southern Asia, Akter et al. (2017) explored women's empowerment and gender inequality in agriculture among women farmers in the Philippines, Indonesia, Thailand, and Myanmar. Using



focus group discussions involving 290 women farmers, the study established that gender inequality in agriculture remains embedded within contradictory social and cultural narratives. Although the study focused on women empowerment and agricultural inequality within Asia, it provides useful insights regarding policy learning and stakeholder engagement in complex policy environments.

In Iran, Raoofi et al. (2020) examined comparative health policy learning during the COVID-19 pandemic. The study utilized the health policy triangle framework and systematic content analysis to evaluate government responses to the pandemic. Findings revealed that Iran's COVID-19 response strategies were challenged by weak governance structures, inadequate protective equipment, and insufficient whole-government coordination. Although the study focused on health policy in Iran, it demonstrates the importance of policy learning in addressing complex governance problems.

In Sub-Saharan Africa, Asongu and Le Roux (2017) investigated the role of Information Communication Technology (ICT) policies in promoting inclusive human development across 49 African countries between 2000 and 2012. Findings indicated that ICT policy reforms significantly contributed toward inclusive development and supported the post-2015 sustainable development agenda. While the study focused on ICT policy, it provides important lessons regarding policy learning and policy adaptation across complex governance contexts.

In South Africa, Matsolo et al. (2018) examined factors affecting student enrollment in higher education institutions using large-scale household survey data. Findings established that factors such as transport challenges, lack of finances, orphanhood, and unplanned pregnancies significantly influenced school enrollment rates. Although conducted within the education sector in South Africa, the study demonstrates the broader influence of policy environments on social outcomes.

Among public secondary schools in Kenya, Akinyi and Orodho (2014) investigated challenges facing the implementation of inclusive education. Using questionnaires, interviews, and observation checklists, the study found that inadequate teaching resources, insufficient special education teachers, and socio-cultural constraints negatively affected inclusive education implementation. The study was conducted in Migori County and therefore differs contextually from the current study focusing on traffic congestion in Nairobi City County.

Bellino and Dryden-Peterson (2019) examined refugee education and national integration policies within Kakuma Refugee Camp in Kenya. The study established that refugee youths experienced national integration policies through “integrating down” and “integrating up” approaches. Although the study focused on refugee education, it contributes important insights regarding policy implementation and stakeholder experiences within complex governance systems.

Tarus et al. (2015) investigated challenges affecting e-learning implementation within Kenyan public universities. Using document analysis, questionnaires, and in-depth interviews, the study found that successful implementation of e-learning policies required institutions to address infrastructural, financial, and technical challenges. Although the study focused on higher education



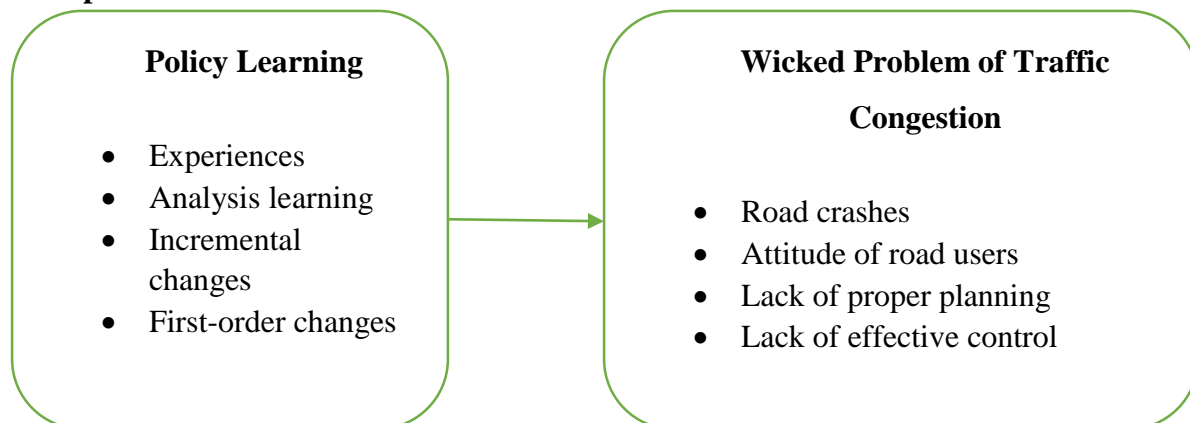
policy, it highlights the significance of policy learning and adaptation in institutional reform processes.

Group Theory

Group Theory was pioneered by Arthur Bentley and argues that public policy emerges from struggles among competing interest groups within society (Truman, 1951). The theory posits that public policy represents the equilibrium reached through continuous competition, negotiation, compromise, and bargaining among diverse groups. Public policies are therefore manifestations of group activities in which different interest groups attempt to influence policy decisions in their favor. Anyebe (2018) further argues that group struggles give rise to public policy outcomes. Through bargaining, compromise, and pressure exerted by powerful groups, policy makers are often compelled to accommodate competing interests during policy formulation processes.

Group Theory is relevant to the current study because it explains group dynamics manifested through policy learning processes aimed at influencing transport policy change in Nairobi City County. The theory provides useful insights regarding how bureaucratic structures and stakeholder groups collaborate in addressing wicked problems such as traffic congestion through collective action and policy engagement.

Conceptual Frameworks



3. RESEARCH METHODOLOGY

The study adopted the pragmatism research philosophy because it advocates the use of mixed methods approaches involving both quantitative and qualitative techniques. Pragmatism provides an effective philosophical framework for understanding social research problems comprehensively (Morgan, 2014). The study further adopted a descriptive research design because it allows researchers to examine phenomena in their natural settings without manipulation of study variables (Siedlecki, 2020). Therefore, the phenomena of policy learning and traffic congestion were described using descriptive research design approaches. Simple random sampling, purposive sampling, and stratified sampling techniques were used to select a representative sample of 169



respondents drawn from SACCOs operating within Nairobi City County, senior officials from Matatu Welfare Association, National Transport and Safety Authority, Ministry of Transport, Usafiri Bora Limited, Mazingira Mema Group, and Smart City Movement Group. Primary data were collected using questionnaires and in-depth interview schedules.

4. FINDING DISCUSSION

Demographics

The study targeted 168 respondents sampled from various stakeholders within the Nairobi transport sector. Out of the 168 questionnaires administered, 137 were duly completed and returned, translating to a response rate of 81.5%. According to Baruch and Holtom (2008), response rates above 60% are considered acceptable in organizational and social research studies for ensuring data reliability. The majority of the respondents were male (65.0%), while female respondents accounted for 35.0%. A larger proportion of respondents fell within the 36–45 years’ age bracket (35.8%), followed by those aged between 46–55 years (27.7%). Respondents aged below 35 years constituted 20.4%, while those aged 56–65 years and above 66 years accounted for 11.7% and 4.4%, respectively.

In terms of education level, the majority of the respondents held graduate-level qualifications (49.6%). Respondents with Higher Diploma qualifications constituted 34.3%, while certificate holders were the least represented at 16.1%. The study further established that most respondents had between 7–10 years of experience in the transport sector, constituting 38.0%. Those with over 11 years of experience accounted for 23.4%, while respondents with 4–6 years of experience represented 27.7%. The least represented category comprised those with less than 3 years of experience at 10.9%. The findings further revealed that the majority of respondents had participated in traffic congestion solution initiatives between 7–10 times, representing 37.2% of the sampled population. This was followed by respondents who had participated 4–6 times at 30.7%. Respondents who had participated more than 11 times constituted 19.0%, while those who had participated less than three times represented 13.1%.

Descriptive Statistics

Influence of policy learning on the Wicked Problem of Traffic Congestion in Nairobi City County, Kenya

The study sought to investigate the influence of policy learning on the wicked problem of traffic congestion in Nairobi City County, Kenya. Respondents were presented with statements on a five-point Likert scale to gauge their level of agreement.

Statement	SD f(%)	D f(%)	N f(%)	A f(%)	SA f(%)	Mean	Std
All stakeholders devoted to addressing challenges in finding solutions to traffic congestion.	3.6	5.1	7.3	35.8	48.2	4.20	0.91



Process of addressing traffic congestion driven by decisive governance in the county.	4.4	7.3	8.8	36.5	43.1	4.06	0.98
Traffic congestion has been fueled by insufficient whole-government approach.	3.6	4.4	10.2	38.7	43.1	4.13	0.89
Delay in addressing traffic congestion is due to contradictory conventional narratives.	2.9	6.6	9.5	40.1	40.9	4.09	0.87
Policy learning in the city county has been informed by acquired knowledge in the same field.	3.6	5.8	8.8	37.2	44.5	4.13	0.90
Bureaucrats employ social interaction to learn the effectiveness of a given policy.	4.4	7.3	10.9	36.5	40.9	4.02	0.98
Experiences and analysis learning have helped boost traffic congestion policies.	2.9	5.8	8.8	39.4	43.1	4.14	0.86
The county is live to first-order and incremental traffic congestion policies.	3.6	6.6	9.5	38.0	42.3	4.09	0.91

Source: Field Data (2024)

The findings revealed that the majority of the respondents strongly agreed that all involved stakeholders are devoted to addressing challenges encountered during policy learning for traffic congestion solutions (SA = 48.2%, A = 35.8%), as supported by a mean score of 4.20 and a standard deviation of 0.91. This finding implies a shared sense of institutional commitment among stakeholders, which forms a critical foundation for effective policy learning processes. This finding concurs with Hall (1993), who argued that stakeholder commitment and institutional learning are fundamental in facilitating policy change and governance reforms in complex policy environments.

The study also revealed that the majority of the respondents strongly agreed that the process of addressing traffic congestion has been driven by decisive governance in the county (SA = 43.1%, A = 36.5%), as supported by a mean score of 4.06 and a standard deviation of 0.98. This suggests that governance quality directly mediates the extent to which policy learning translates into actionable traffic management reforms. The findings are consistent with Pierre (2011), who established that urban governance effectiveness significantly shapes transport policy implementation and adaptive learning in metropolitan systems.

Furthermore, the study revealed that the majority strongly agreed that traffic congestion in Nairobi has been fueled by an insufficient whole-of-government approach (SA = 43.1%, A = 38.7%), with a mean score of 4.13 and a standard deviation of 0.89. This finding underscores the fragmented nature of inter-agency coordination that continues to impede holistic policy responses to the



congestion challenge. Similar findings were reported by Carey and Crammond (2015), who observed that weak intersectoral collaboration undermines integrated public policy implementation in urban governance systems.

The study revealed that the majority agreed that the delay in resolving traffic congestion is attributable to contradictory conventional narratives (SA = 40.9%, A = 40.1%), as supported by a mean score of 4.09 and a standard deviation of 0.87. Competing institutional narratives impede the convergence of learning outcomes into unified policy frameworks. This finding aligns with Hajer (1995), who noted that competing discourse narratives within institutions often constrain policy consensus and delay effective governance interventions.

The study further revealed that most respondents strongly agreed that the policy learning process in Nairobi has been informed by acquired knowledge in the same field (SA = 44.5%, A = 37.2%), as supported by a mean score of 4.13 and a standard deviation of 0.90. This points to the value of institutional memory and sector-specific expertise in shaping evidence-based traffic policies. The findings support the arguments advanced by Bennett and Howlett (1992), who emphasized that policy learning depends heavily on accumulated professional knowledge and prior policy experiences.

Additionally, the study revealed that county bureaucrats employ social interaction approaches to assess the effectiveness of transport policies (SA = 40.9%, A = 36.5%), with a mean score of 4.02 and a standard deviation of 0.98. One senior NTSA official interviewed observed that “deliberative forums between SACCO representatives and county officials have proven indispensable in bridging knowledge gaps in policy implementation.” This finding is consistent with Heikkila and Gerlak (2013), who demonstrated that social learning interactions are pivotal in enhancing policy learning and adaptive governance in complex urban systems.

The study revealed that the majority strongly agreed that experiences and analytical learning have helped boost traffic congestion policies (SA = 43.1%, A = 39.4%), as supported by a mean score of 4.14 and a standard deviation of 0.86. This affirms that cumulative experiential knowledge remains a key driver in refining policy instruments directed at traffic management in Nairobi. Similar observations were made by Argyris and Schön (1978), who established that experiential and reflective learning significantly improve institutional decision-making and policy adaptation processes.

Lastly, the study revealed that the majority of respondents strongly agreed that the county is responsive to first-order and incremental traffic congestion policies (SA = 42.3%, A = 38.0%), supported by a mean score of 4.09 and a standard deviation of 0.91. This finding is congruent with Lindblom (1959), who noted that incremental policy learning serves as a practical mechanism through which governments gradually respond to complex public policy challenges.

Correlation Analysis

Pearson correlation analysis was performed to establish the nature and strength of the bivariate relationships between the independent variable (Policy Learning) and the dependent variable (wicked problem of traffic congestion).

Pearson Correlation Matrix



Variable	Traffic Congestion	Sig. (2-tailed)	N
Policy Learning	0.714**	0.000	137

****Correlation is significant at the 0.01 level (2-tailed).**

Source: Field Data (2025)

Policy learning demonstrated statistically significant and strong positive correlations with the wicked problem of traffic congestion at the 0.01 significance level. Policy learning recorded a significant correlation coefficient ($r = .736, p < .01$). These findings suggest that policy learning is a crucial predictor of the traffic congestion outcome variable, thereby justifying the subsequent regression analysis. The findings corroborate those of Dunlop and Radaelli (2018), who established that policy learning significantly enhances policy responsiveness and effectiveness in addressing complex governance problems.

Regression Coefficients

Variable	B	Std. Error	Beta	t	Sig.
(Constant)	0.412	0.218		1.890	0.061
Policy Learning (X1)	0.291	0.068	0.284	4.279	0.000

Dependent Variable: Wicked Problem of Traffic Congestion.

Source: Field Data (2026)

Policy learning had statistically significant positive coefficients ($\beta = .284, t = 4.279, p < .001$) at the 0.001 significance level. These findings collectively affirm the significant role of the policy learning component in addressing the wicked problem of traffic congestion in Nairobi City County. The findings are in agreement with May (1992), who argued that policy learning enhances institutional effectiveness by enabling governments to adapt policy tools to emerging governance challenges.

5. CONCLUSION AND RECOMMENDATIONS

Conclusion

The study concluded that policy learning is a significant determinant of progress in addressing the wicked problem of traffic congestion in Nairobi City County. The evidence suggests that stakeholder devotion to learning, decisive governance, social interaction among bureaucrats, and the adoption of experiential and analytical learning approaches collectively enhance the quality and adaptability of traffic congestion policies. The county's receptiveness to first-order and incremental policy adjustments creates a conducive environment for iterative policy improvement. The study further concluded that sustained investment in knowledge-sharing mechanisms, cross-institutional learning platforms, and evidence-based policy reviews is essential for converting policy learning dividends into measurable improvements in traffic management outcomes in Nairobi City County.

Recommendations



The study recommended that the Nairobi City County Government, in collaboration with the National Transport and Safety Authority and the Ministry of Transport, should establish structured inter-institutional policy learning platforms, such as quarterly transport policy review forums and cross-county technical learning exchanges. These platforms should systematically document lessons from both successful and failed traffic management interventions, both locally and internationally. Dedicated policy learning units within the transport department should be adequately resourced to synthesize acquired knowledge and translate it into actionable policy recommendations. Such deliberate institutionalization of policy learning would significantly accelerate evidence-based progress in addressing the wicked problem of traffic congestion.

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