

*Utility Of Anticipatory
Management Approach
In Regulating
Motorcycle Public
Transport In Kisii
Town, Kenya*

Sibwoga Veronicah N

*Tutor, Kiogo High School, P.o Box 1041-40200,
Kisii-Kenya*

Prof. Francis Angawa

*Dean, Department of Geography and Social
Development, Jaramogo Oginga Odinga University
of Science and Technology, P.O Box 210-40601,
Bondo-Kenya*

Dr. Warkach K. Tonui

*H.O.D, Department of Geography and Social
Development, Jaramogo Oginga Odinga University
of Science and Technology, P.O Box 210-40601,
Bondo-Kenya*

ABSTRACT

The use of Motorcycles Public Transport (MPT) is partly the cause of heavy traffic congestion in Kenya's urban centers. Sustainable urban transport implies systematic change in approaches to urban transport service provision, regulation and efficiency improvement. This study was conducted in Kisii town, Western Kenya, a medium-sized town characteristic of high Motorcycle-related Traffic Congestion (MTC). Several scenarios in Kisii town have promoted and sustained use of MPT despite it being uncomfortable, unsafe and unreliable. These include; rapid urban sprawl, increasing travel distance, high travel demand, failed urban infrastructure, laxity in law enforcement and continued population increase. The study revealed that the introduction and continued use of MPT has compounded the transport problem in Kisii town. With minimal policy interventions, the town will remain locked in traffic uncertainties and an eventual urban transport crisis too expensive to handle is pending. However, this paper presents an opportunity to solve the transport problem in the town through use of Anticipatory Management Approach (AMA). Results of this study revealed that 61.4% of the respondents agreed that AMA will control MPT. Still, 21.3% saw AMA as a good strategy to be adopted in reducing MTC while 17.3% recommended that the approach will help the study community to create sustainable urban travel modes. The benefits accruing from the use of MPT are many but the risks and danger thereof are equally great. Overall, radical policy interventions should be initiated through AMA models and residents should be educated to enable them make informed choices in the steadily changing urban transport modalities. Improvements should also be made on the town's transport infrastructures to control MPT and create sanity in the Kisii town public transport industry.

Keywords: Motorcycle, Public, Transport, Traffic, Congestion, Anticipatory Management Approach, Kisii, Kenya

1. INTRODUCTION AND LITERATURE REVIEW

The world today is experiencing rapid urbanization with towns growing in number and size. This trend is common in Developing Countries (DCs) where it has led to increasing travel distance, high travel demand and subsequently high travel costs. The governments in the DCs are either unable or unwilling to provide organized urban mobility systems, hence the emergency of informal public travel modes such as the motorcycles. MPT is less common in the developed countries due highly organized public transport systems owned and run by the states and a high level of private car ownership in. In the DCs however, public transport is private and private car ownership is still very low. Besides, state-run public transport, where available in the DCs, have not had the necessary capacity to meet the increasing travel demand as towns increase in number and expand in size (Spooner, 2011).

The introduction and increasing use of MPT is partly responsible for high traffic congestion, frequent traffic crashes and air pollution due to smoke emissions from the large number of these vehicles in urban centers (WHO, 2006). It is also partially blamed for the increasing congestion in public health facilities due to many accident casualties and high crime rates in these cities. Therefore, it is becoming increasingly clear that cities cannot function efficiently without properly organized public transport systems.

Cities in the developing countries have poorly designed road networks with limited capacity and service lanes, ageing pavements and minimal street lighting. These bad road conditions reduce vehicle speeds and increase maintenance costs hence increased prevalence of MPT (Kumar and Barrett, 2008). Increasing prevalence of MPT has turned urban transport more chaotic than ever before as their accident rates are higher compared to that of other motorized vehicles (WHO, 2012).

In Sub Sahara Africa (SSA), increasing use of MPT is due to difficult economic setting experienced since the 1980s and 1990s (Kumar and Burette, 2008). In Kenya, MPT was adopted largely as a solution to the escalating poverty levels in the late 1990s occasioned by acute job scarcity in the country. The government of Kenya waived motorcycle import duty in 2008 thus increasing importation of these vehicles such that the number rose from 51,412 registered motorcycles in 2008 to 91,151 in 2009, 117,266 in 2010 and 140, 215 in 2011 (KNBS, 2012). This increasing trend has choked Kenyan towns with traffic and Kisii town in particular has suffered uncontrolled MTC. Thus, governments needs to plan on how provide research-based, safe and effective urban transport for efficiency.

Anticipatory management approach is a planning strategy whereby a possible problem called “an expected problem” is identified in society much earlier before it turns out to be a crisis, it is defined as an anticipated problem and plans are put in place to solve the would be crisis beforehand (Ashley and Marrison,1995). Being anticipatory enables modern societies faced with constant change to manage it in an informed, systematic and calm manner rather than allow change to occur as a chain of crises.

The present study investigated the possible contribution of AMA towards controlling MTC in Kisii town of Western Kenya where the increasing use of MPT is responsible for a high number of road traffic crashes (Onserio, 2013).

2. MATERIALS AND METHODS

2.1 STUDY AREA

This study was conducted in Kisii town, Fig. 1 in Western Kenya, SSA. Kisii town lies at the center of Kisii County located between latitude $0^{\circ}30'$ and $0^{\circ}58'$ South and longitudes $34^{\circ}42'$ and $35^{\circ}05'$ East. It covers a total area of 15.5km and is a bustling home of several business organizations, educational institutions and government agencies. It experiences highland equatorial climate with high rainfall (2000mm average

annually) hence more storm water especially during the long rainfall season between February and June that cause many potholes and gullies on its roads. The town had an estimated population of 50,363 people according to the national census of 2009 in Kenya. Out of this, it was estimated that 25,569 were males while 24,794 were females (Kenya National Bureau of Statistics, hereafter KNBS, 2009). There were a total of 12,637 households (Kisii District Development Plan, hereafter KDDP, 2012; KNBS, 2009). The principle rock formation in the town is basically phylolites and Nyanzian, which presents superior physical properties of high compacted densities hence no construction problems and associated geo-hazards like subsidence and sinkholes. This has favoured the rapid expansion of the town in all directions.

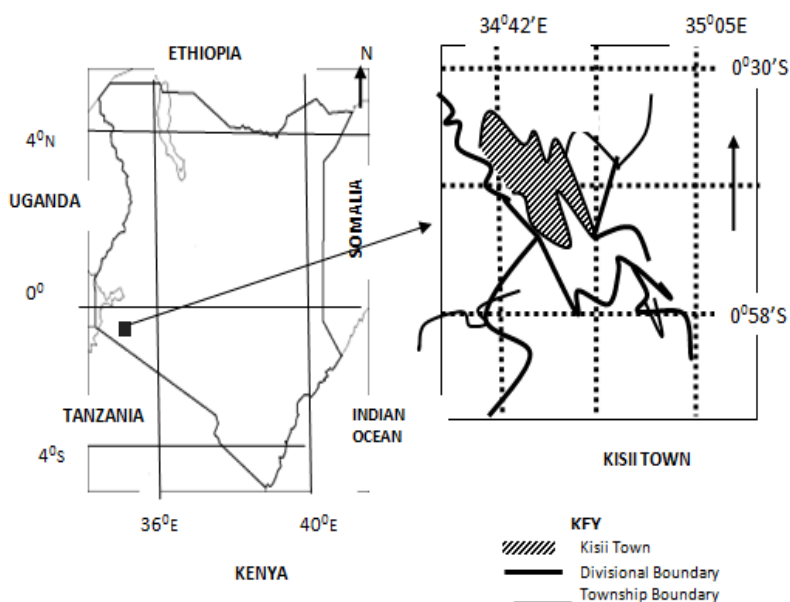


Fig. 1 location of Kisii town in Kenya

Source: Kenya Primary Atlas, 2006

2.2 SOURCES AND METHODS OF DATA COLLECTION

Data for this study on motorcycle accident casualties and deaths were obtained from the Kisii level 5 Hospital registries for the period 2011-2014 while data on motorcycle traffic accident rates were obtained from the Kisii police registry for the same period (2011-2014). These data were collected through use of questionnaires and interview schedules.

2.3 DATA ANALYSIS

Data were analyzed using standard statistical methods. Means, percentages, frequency tables and time series graphs were used to determine the trend of motorcycle accidents, accident casualties and deaths between 2011 and 2014 as well as the expected role of AMA in regulating MPT in Kisii town.

3. RESULTS AND DISCUSSIONS

3.1 ROLE OF ANTICIPATORY MANAGEMENT APPROACH IN REGULATING MPT IN KISII TOWN

Table 1, Fig.2 and table 2 summarize the trends of motorcycle-related accident frequency and subsequent accident casualties in Kisii town 2011-2014. This period was chose because it was characterized with unpredictable rise and fall of road traffic crushes in the town which calls for research- based action (Ogendi, 2012).

Table 1: Accident frequency in Kisii town 2011- 2014

Year	MC accidents	Accidents involving Other Vehicles	Total
2011	85.2	14.8	100
2012	81.8	18.2	100
2013	75	25	100
2014	81.3	18.7	100

Source: Kisii county ministry of transport, 2015

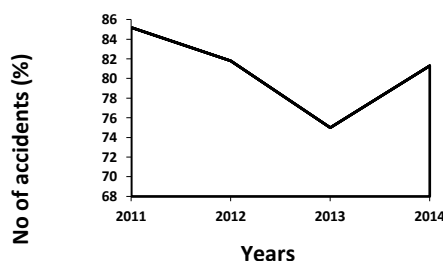


Fig 2. Trend of motorcycle accidents 2011 - 2014 in Kisii town

Field studies, 2015

Table 2: Trend of motorcycle accident casualties in Kisii level 5 Hospital 2011-2014

year	deaths	serious injuries
2011	39	161
2012	37	171
2013	41	193
2014	49	163
Total	166	790

Source: Kisii county Ministry of Health, 2015

From table 1 and Fig. 2, motorcycle related accident in Kisii town were always high even when the general frequency of accidents reduced as is the case of 2011-2013. This was associated with the increasing number of motorcycles in the town (Kisii County Ministry of transport, 2015). From table 2, it was indicated that Kisii town lost 41 people on average yearly to motorcycle-related accident in the period 2011-2014 while 172 others sustain injuries over the same period (2011-2014).

The AMA model emphasize on unearthing the problem, preparing its summary regarding its background, trends and driving forces. Special consideration is laid on the people to be affected and forecasting on its potential implications before prioritizing the problem. Further, assigning accountability and responsibility is important to determine its success. Table 3 summarizes the expected role of AMA in regulating MPT in Kisii town.

Table 3: Expected role of AMA in motor cycle traffic in Kisii Town (n =127)

Aspects	Number	Percentage
Control MPT	78	61.4 %
Reduce MTC	27	21.3%
Sustainable travel mode	22	17.3%
Total	127	100%

Field data 2015

From table 3, the study established that AMA will regulate MPT (61.4%), reduce MTC (21.3) and make this mode of public travel sustainable (17.3%). These findings are in agreement with Ashley and Marrison (1995). Therefore, the study confirmed that MPT requires proper management for the study community to continue to utilize its opportunities.

The study established that there are National and County transport-related structures in Kisii town that may be utilized in implementing AMA models to curb MTC problem. The National Transport and Safety Authority (NTSA) established in 2012, is vested with the responsibility of facilitating the establishment and provision of safe, reliable and efficient road transport in Kenya (NTSA, 2012). NTSA has in effect established the Kisii County Transport and Safety Committee (KCTSC) which this study chose to use for purposes of implementing AMA decision-making models. In responding to the MTC problem, the study assigned NTSA as the anticipatory function manager in Kisii town in view of the Authority's position regarding the national transport industry.

The role of the function manager is to oversee the strategic intelligence systems, NTSA, through the KCTSC will analyze and compile the trends information that were established by this study as the signals of MTC problem in Kisii town into an issue brief. The function manager will also facilitate action and policy teams. The trends information identified by this study included increasing traffic congestion, slow flow of traffic, time wastage, delayed services, increased traffic accidents, increased resource wastage, congested health facilities and subsequent slow economic development.

To implement AMA there is need to establish a steering committee to work with the function manager. This committee should consist of people with an in-depth knowledge regarding transport systems in Kisii town and have an open mind to the external forces that may influence the community (Ashley and Marrison, 1995). Its

work includes reviewing the MPT briefs, conduct vulnerability audit to determine its implications and make a decision on how the Kisii County government should influence MPT direction in the town.

This study determined that MPT affects a cross-section of the residents of Kisii town, both users and non-users of MPT as demonstrated in Table 4.

Table 4: Groups of people likely to be affected by AMA in Kisii town (n =127)

Group	No	Percent
Motorcyclists	73	57.5
Travelers	41	32.3
County government	9	7.1
Non users	4	3.1
Total	127	100

Field studies, 2015

From table 4, AMA will largely affect motorcyclists who are the service providers (57.5%). It will also affect travelers who are the service recipients (32.3%) and the Kisii county government (7.1%) which is the source implementation resources. Besides non users of the MPT services will equally be affected (3.1%). The study thus concluded that the entire Kisii town community is likely to be affected by the implementation of AMA in regulating MPT in the town. Therefore, AMA is to be used on a cross-functional team basis such that it involves all these groups of people. This research therefore identified these groups together as the problem owner-since they are the ones either to benefit or be hurt by the action. The problem owner will work with the Anticipatory Manager to select the action team, set the agenda and facilitate team meetings as necessary to enhance implementation (Moyer, 2011).

The action team should be made of highly qualified professionals with the necessary skill in transport management from among the study community and with ability to determine proper action as well as sources of funds. This study suggested that the action team be chaired by the Kisii County Minister for transport and infrastructural development and include members from the KCTSC together with other leaders in the County government.

Proper communication is important in problem management. The steering committee should facilitate communication regarding the action plan to all stakeholders. This should be done by the KCTSC through mass media, public meetings such as the Chiefs barazas, religious groups' meetings and seminars for the riders' leaders through whom all riders can be reached. Effective issue communication is significant to ensure no information is left unexplored to eliminate any possible barriers on the implementation process.

The study report confirmed that the Kisii town community is positive towards the use of MPT as demonstrated in table 5. Therefore there is need to regulate it through AMA models, create order and enhance the community's benefits from this transport sector.

Table 5: Current role of MPT in Kisii town (n = 127)

Aspect	No	Percentage
Creation of jobs	87	68.5%
Easy mobility	13	10.2%
Increased county revenue	27	21.3%
Total	127	100%

Field studies, 2015

From table 5, it is clear that MPT has created many job opportunities for the people of Kisii town (68.5%), contributes towards the Kisii county revenue collection (21.3%) which facilitates economic and social development and, has improved mobility within Kisii town (10.2%) hence its implied significance.

The KCTSC will evaluate the action plan in relation to the macro-environment so as to establish how the objectives have been realized and how the interest groups respond. Assessing what society outside Kisii town has experienced on the MTC issue will help the issue action teams draw upon these experiences to build on the MTC problem management in Kisii town.

The KCTSC is expected to present the action plan to leadership, the county government for consideration. This action plan, according to AMA should include such details as what exactly is to be done, at what cost, sources of funds identified and time frame so as to be used to decide on the best action practice. The level of an emerging issue can be onset, moderate, dormant or crisis and any such problem is best handled at onset stage (Moyer, 2011). The MTC problem in Kisii town is better manageable in its current state rather than when it reaches crisis stage.

Specifically, the study established that AMA significantly provides adequate direction towards managing the MTC problem in Kisii town. Since the study identified the MTC signals through AMA model one, the Kisii county government structures can use these signal to draw issue summary upon which to determine its level and prioritize the problem against other issues so as to facilitate necessary action. This way, the MTC problem will be contained in good time.

4. CONCLUSION AND RECOMMENDATIONS

This study concluded that MPT has positively affected the residents of Kisii town by providing job opportunities, facilitating quick mobility and contributing towards county revenue to enhance social and economic development of the county. However, the mode is also responsible for the high traffic congestion that has caused many other problems such as frequent road traffic crashes, deaths and injuries as well as strained public health service provision. Another equally undesirable consequence is time wastage that has slowed down the pace of economic productivity for social development due to loss of working hours in traffic

jams, especially in the morning. Therefore, the study concluded that the AMA decision-making process be employed in regulating MPT and curbing MTC in the study area.

4.1 RECOMMENDATIONS

One of the recommendations based on the findings of this study is that the number of licensed motorcycles in Kisii town be regulated by stringent legislation to minimize the challenges that arise from the increased use of this means of transport. According to the findings of this research, many of the town residents have turned to MPT because of the high travel cost occasioned by the scarcity of public travel especially the *matatu* vehicles. Therefore, local authorities should consider the possibility of providing formal travel modes such as state-run bus services to meet the currently high travel demand within town, reduce travel cost and influence travelers from the use of MPT to solve the motorcycle traffic congestion puzzle in the area.

Secondly, the study recommends that there be organized pedestrian provisions such as sidewalks and road signals within town, separate lanes for motorcyclists and or set aside areas designated for operation to help reduce travel risk and the acute MTC in Kisii town. Further, there should be strict and frequent inspection of all motor-cycles operating in Kisii town to ensure that only road-worthy ones remain in service and that all riders are adequately trained and licensed to engage in MPT. This will phase out many untrained riders and also regulate the uncontrollable flow into this unskilled labour market.

Thirdly, since the MPT has given rise to problems, the government should consider investing in road improvement in the study area so as to make them usable by all types of vehicles. This will encourage use of other motorized vehicles like buses and cars to improve transport service delivery and curb the increasing popularity of MPT. Use of large-capacity vehicles can also reduce traffic congestion. Further, the current laxity in law enforcement is largely responsible for the mushrooming of motorcycles. It is recommended that agencies responsible for law enforcement be more vigilant on all road users, especially MPT operators.

Finally, it is clear that the AMA decision-making model should be adopted to solve MTC in Kisii town. Since the introduction of a new idea usually meets resistance, there is need to sensitize the residents and MPT operators through all manner of means on the advantages of the AMA model. There is also need for further studies on;

- The sustainability of MPT as a means of urban mobility
- The challenges of MPT from the perspective of other emerging models of urban transport and,
- A comparative in-depth investigation into all alternative modes of urban public transport to enable the Kisii county government settle on the most sustainable one.

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