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At the crossroads

The politics of road safety in Nairobi

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Case study

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Cover photo: Children from General Kago Primary School, Thika Municipality, central Kenya, try to cross the road © Georgina Goodwin/FIA, 2014.

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This document contains preliminary research, analysis, findings and recommendations. It is being circulated to stimulate timely discussion and critical feedback, and to influence ongoing debate on the emerging issue of the political economy analysis of road safety.

About this case study

This case study explores road safety issues in Nairobi, Kenya, the challenges involved in confronting them and the potential opportunities. It is a political economy study that examines the interests and influence of the various actors who have a stake in road use, safety and transport in the city.

This case study is part of a broader project that analyses the political economy of urban road safety issues, undertaken by the Overseas Development Institute (ODI) and the World Resources Institute (WRI), and funded by the FIA Foundation. It accompanies: a theoretical background paper (Wales, 2017); two other case studies on Bogotá, Colombia, and Mumbai, India; and a synthesis report.

The political economy of road safety

Political economy is a discipline with a long tradition in the social sciences. As an analytical approach, it seeks to understand the underlying reasons why things work the way they do and to identify the incentives and constraints impacting the behaviour of actors in a relevant system (Rocha Menocal, 2014). Characteristics of a political economy approach include:

- a concern with the role of formal and informal ‘rules of the game’.
- an analysis of power and the processes of contestation and bargaining between economic and political elites.
- a focus on the interests of different groups.
- an analysis of how these interests impact development outcomes, at times to the detriment of broader development objectives.

In general, there has been a tendency within policy-making circles to treat road safety as a technical issue. Exploring road safety from a political economy perspective constitutes an emerging field of study which seeks to understand when, how and why road safety emerges as an issue of public concern and how reform efforts can be most effectively supported taking those dynamics into account. The most recent *Global Report on Road Safety* includes some key aspects related to the political economy of road safety such as political saliency and resource allocation. The report also emphasises the importance of having traffic safety on the political agenda as a manner to mobilise resources and public awareness on road safety issues (WHO, 2015).

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Acronyms

AfDB	African Development Bank
BRT	bus rapid transit
CSO	civil society organisation
KARA	Kenya Alliance of Residents Association
KenHA	Kenya National Highways Authority
KSh	Kenyan shilling
KURA	Kenya Urban Roads Authority
MOA	Matatu Owners' Association
MWA	Matatu Welfare Association
NAMATA	Nairobi Metropolitan Area Transport Authority
NGO	non-governmental organisation
NTSA	the National Transport and Safety Authority
ODI	Overseas Development Institute
RSIP	Road Sector Investment Programme and Strategy
SACCO	Savings and Credit Cooperative Organisation
UNEP	United Nations Environment Programme
WHO	World Health Organization
WRI	World Resources Institute

Methodology

The research took a political economy approach. The methodology was based on ‘problem-driven political economy analysis’ as described in the preceding literature review on the political economy of road safety (Wales, 2017). The methodology broke down the approach into four phases:

1. Review of the existing data on road safety to identify key trends in terms of geographies, demographics and modes.
2. Identification of the key causal factors behind road safety challenges, or the key ways in which programs to address this operated.
3. Identification of the underlying systemic drivers of the causal factors, including the interests and influence of different actors that relate to the problem identified, whether they have been able to take effective action through different institutional channels, and how these dynamics have facilitated or blocked progress.
4. Identification of potential strategies or lessons learned.

To implement this approach, we gathered existing local traffic fatality data and literature on the local transport and road safety context. We then conducted semi-structured interviews with 22 key informants from relevant government agencies (county and national level), civil society organisations (CSOs) and non-governmental organisations (NGOs), donor agencies, transport providers, and people who are immediately affected by road safety issues in the city. Specifically:

- Association for Safe International Road Travel
- Boda Boda Association
- *boda-boda* drivers
- Handicap International
- Japan International Cooperation Agency
- Kenya Alliance of Residents Association
- Kenya Institute of Public Research
- Matatu Owners’ Association
- *matatu* touts and drivers
- Nairobi Deputy Traffic Commandants
- Nairobi Metropolitan Area Transport Authority
- National Transport and Safety Authority
- World Bank Africa Transport Policy Programme
- UN-Habitat
- United Nations Environment Programme
- Usalama Watch

The data collected was analysed using a matrix to compare and triangulate different attitudes and perceptions of road safety. The draft report was reviewed by eight independent experts with knowledge of road safety, the Nairobi context and political economy dynamics.

While the study does not claim to be exhaustive, the approach does provide an alternative framing of the problem and offers propositions regarding the potential for reform. To stimulate further debate, and take the recommendations forward, a launch event and workshop are planned for March 2018 in Nairobi, bringing together CSOs, NGOs and international actors.

Executive summary

Nairobi is one of Africa's fastest growing cities: in just 16 years, its population has doubled (World Bank, 2014). An increasing number of people and vehicles move around the city every day, creating competition for space and ease of travel (JICA, 2013). Congestion is acute and collisions are common: 668 people were killed in traffic collisions in Nairobi in 2015, accounting for 22% of all traffic fatalities in Kenya that year (NTSA, 2015). The available data, though not robust, suggests that pedestrians and motorcyclists are the most seriously and frequently affected by road traffic collisions (NTSA, 2016). And these people are also likely to be among the lowest income groups. More than half of all fatal traffic collisions in Nairobi occur on the new high-speed highways, and collisions peak over weekends and evenings (NTSA, 2016). Recent years have seen a decrease in the number of overall fatalities, but the number of motorcycle users killed in collisions continues to rise (*ibid.*).

The effectiveness of road safety policies

In recent years, the Kenyan national government has enacted many policies and regulations to address vehicle standards and road use – perhaps in response to national concern about worsening congestion and increasing international focus on road safety. However, their effectiveness is limited for several reasons:

1. **Governance fragmentation.** The planning, design and maintenance of all roads in Nairobi are split across distinct national road agencies, urban development and transport departments and the county government. This fragmentation makes it difficult for road safety to be coordinated and mainstreamed across public road and transport plans.¹
2. **Entrenched interests.** The powerful Matatu Owners' Association (MOA) fights for control over the public transport market and often contests new legislation that could reduce their profits. Regulating the use of *matatus* – privately owned minibuses – is therefore extremely difficult unless the *matatu* owners can also benefit by, for example, having a stake in the sale of speed governors.
3. **Enforcement.** Although the National Transport Safety Authority (NTSA) has a mandate to assess road designs for safety concerns, its recommendations can be ignored by other government bodies. Also, a culture of bribery undermines the effectiveness of the traffic police in

enforcing traffic regulations and limits public respect for law enforcement.

4. **Public perception of road safety.** Traffic collisions are widely considered to be the fault of the individual, and therefore government response often focuses on forcing behavioural change – building physical barriers such as railings or speed humps. Such interventions largely overlook the root causes of road safety problems, such as poor road design and limited mobility options.

Overcoming road safety issues remains a low political priority. For an individual to move around Nairobi, the fastest, safest and most comfortable option is to use a private vehicle. Those who can't afford this, travel in a minibus (*matatu*) or on a motorbike taxi (*boda-boda*). If this too expensive, they must walk. There is, therefore, no strong collective demand for improved public transport: instead, individuals demand more space and better roads for cars.

Even if public demand was there, politicians are still more likely to prioritise road construction over road safety improvements, as shown by consistent government funding for road construction, the prioritisation of new roads in urban development plans, and the recent expansion of several highways in Nairobi. New roads are a tangible sign of government action, whereas road safety improvements are less visible, and so politicians can gain more public recognition for road improvements than for road safety improvements.

The way forward

To overcome these challenges, strategic interventions are needed. The report makes several recommendations to local and international reformers:

1. **Increase the authority of road safety assessments.** This could be attempted by combining local and international technical expertise and lobbying power to ensure road safety assessments are carried out during the design phase and have legally binding recommendations.
2. **Work in partnership with the new bus rapid transit (BRT) system.** The expected construction of a BRT system in Nairobi will require the redesign of major roads in the city. This presents an opportunity for local and international organisations to work with the newly formed Nairobi Metropolitan Area Transport Authority (NAMATA) to introduce road safety principles.

1 The recent formation of a new Nairobi Metropolitan Area Transport Authority (NAMATA) may improve coordination over road and transport design for the city.

3. Foster intercounty competition on road safety.

International organisations could support the NTSA to rank each county government on its road safety record and publicise the results, praising or shaming the respective governors and councillors and encouraging improvements.

4. Incentivise safer *boda-boda* driving. International and local organisations could work with the Boda Boda Association to find ways to meet drivers' needs while incentivising safer roads – for example, by providing shelters at designated *boda-boda* drop-off points to encourage their use.

1 Introduction

Nairobi is a rapidly growing city (World Bank, 2014) in which an increasing number of people and vehicles attempt to move around the city every day (JICA, 2013). Like many other fast-growing cities, the competition for the space and means to travel quickly and easily is a huge challenge, and creates collisions and congestion. Nairobi County consistently has the highest number of road traffic fatalities of all counties in Kenya and one of the highest numbers of traffic fatalities per 100,000 residents (NTSA, 2015).

The available data, although not robust, shows that traffic collisions peak during weekends and evenings (NTSA, 2016). It also reveals that fatal traffic collisions are most likely to occur on the new high-speed highways passing through Nairobi. Pedestrians and motorcyclists are the most seriously and frequently affected by road traffic collisions, and while there has been a recent drop in traffic fatalities overall, the number of motorcycle users killed in collisions continues to rise (NTSA, 2016).

This case study explores the underlying challenges to addressing road safety in Nairobi, and the opportunities for overcoming them, from a political economy perspective. The question informing this research is: why is improving road safety in Nairobi so challenging? To answer this, the research situates road safety in the context of wider problems in urban development and governance, transport provision, and competing urban mobility priorities. The study goes beyond technical assessments of road safety to better understand the political economy dynamics at play, and from this is able to identify potential entry points for more effective action on road safety in Nairobi. We ask:

- What are the political economy factors contributing to persistently high levels of road traffic fatalities and injuries?
- What prevents more effective action to improve road safety from being taken?
- What opportunities are there to address underlying causes of road safety problems?

1.1 Understanding road safety

Attempts to address road safety around the world have often focused on the collision itself and have understood the problem as the fault of an individual driver and/or pedestrian. Focusing on human error and behaviour leads to road safety initiatives that try to change this behaviour – for example, through public information campaigns, regulations and sanctions, and physical changes such as speed bumps (Wales, 2017).

But there is growing recognition that many more and much wider factors underlie the immediate cause of a collision, and that road safety can be viewed as an outcome of multiple issues, rather than an isolated problem (Wales, 2017). The popular ‘safe systems’ approach considers how the causes of collisions can be addressed in a more integrated way (Welle et al., forthcoming). This could involve changes to various public-sector issues such as land use, vehicle standards, public transport and emergency medical response. Such factors shape people’s transit patterns and options, and the consequences of an injury, which together determine the likelihood of a fatal collision.

Recent thinking on road safety argues that the multiple issues affecting outcomes are grounded in how an area is governed (Wales, 2017). According to Andrews (2015): ‘Road safety is best understood as a governance challenge rather than a technical problem’; it is a public good, threatened by the interests of people to move quickly around densely populated areas, and by competing government priorities over services, investment and economic development (Wales, 2017).

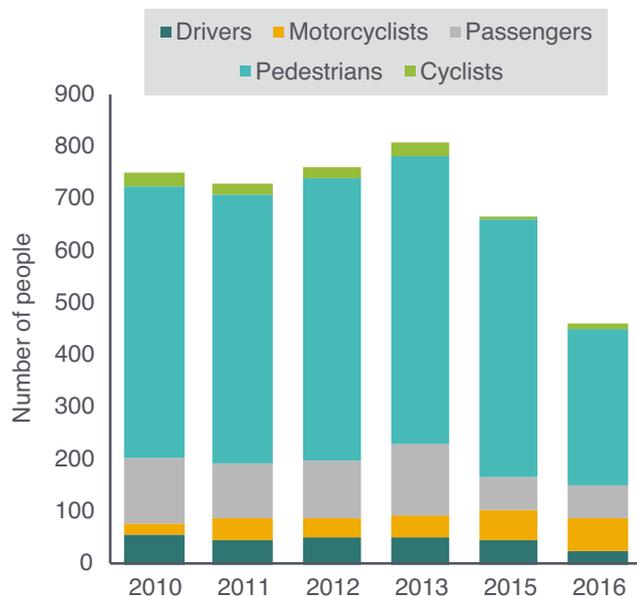
This research attempts to understand what governance issues shape the road and transport sector and so affect road safety outcomes. To do this, we use political economy analysis, which identifies who has the power to influence road safety and what shapes their behaviour. This means examining different stakeholders’ ideas and interests in how a city should develop, their priorities for how they move around the city, and what rules – formal and informal – govern how they use the road and how politicians respond to transport and safety concerns.

2 Nairobi's road safety problem

The available data, though not robust, shows that road traffic collisions primarily affect poorer populations living in Nairobi. This is because most fatalities in traffic collisions are pedestrians (Figure 1) and pedestrians are more likely to belong to low-income groups (Figure 2). Pedestrians accounted for 65% of traffic fatalities in Nairobi (NTSA, 2016) and while wealthier residents can afford to use safer transport, such as a private car, poorer people are less likely to have this option.² As Figure 2 shows, in 2005 most middle- and low-income people either walked or took a *matatu* to move around Nairobi, while high-income groups were much more likely to use a car (almost 30% of high-income residents' journeys were by car – see Figure 2).³

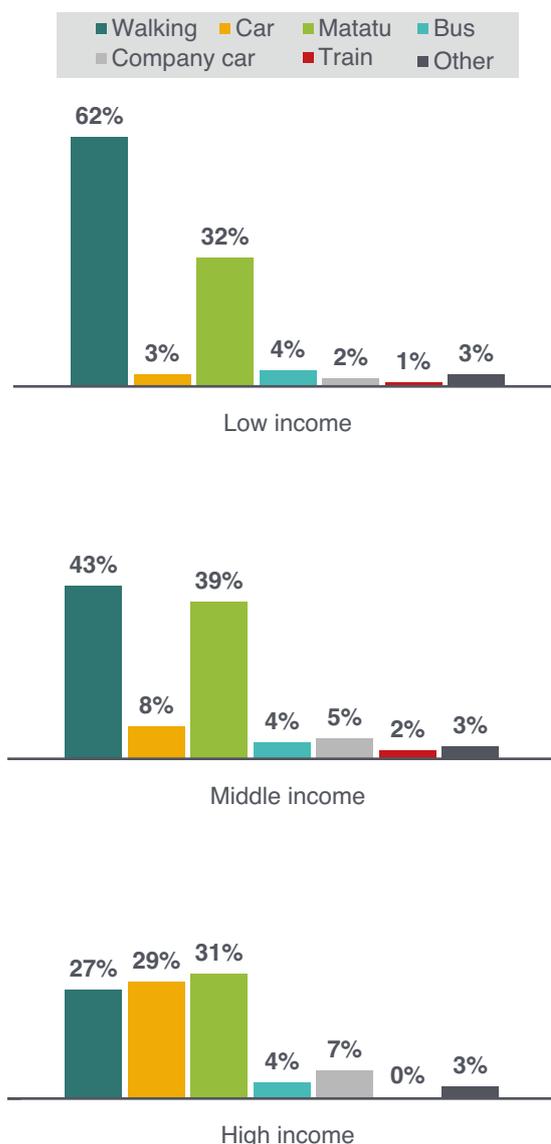
The number of people killed in crashes in Nairobi has declined in recent years (Figure 1). The number of motorcycle users dying in traffic crashes increased in 2015 and

Figure 1 Traffic fatalities in Nairobi by road user, 2010–2016



Source: data from NTSA, 2017.

Figure 2 Mode share in Nairobi by socioeconomic group, 2005

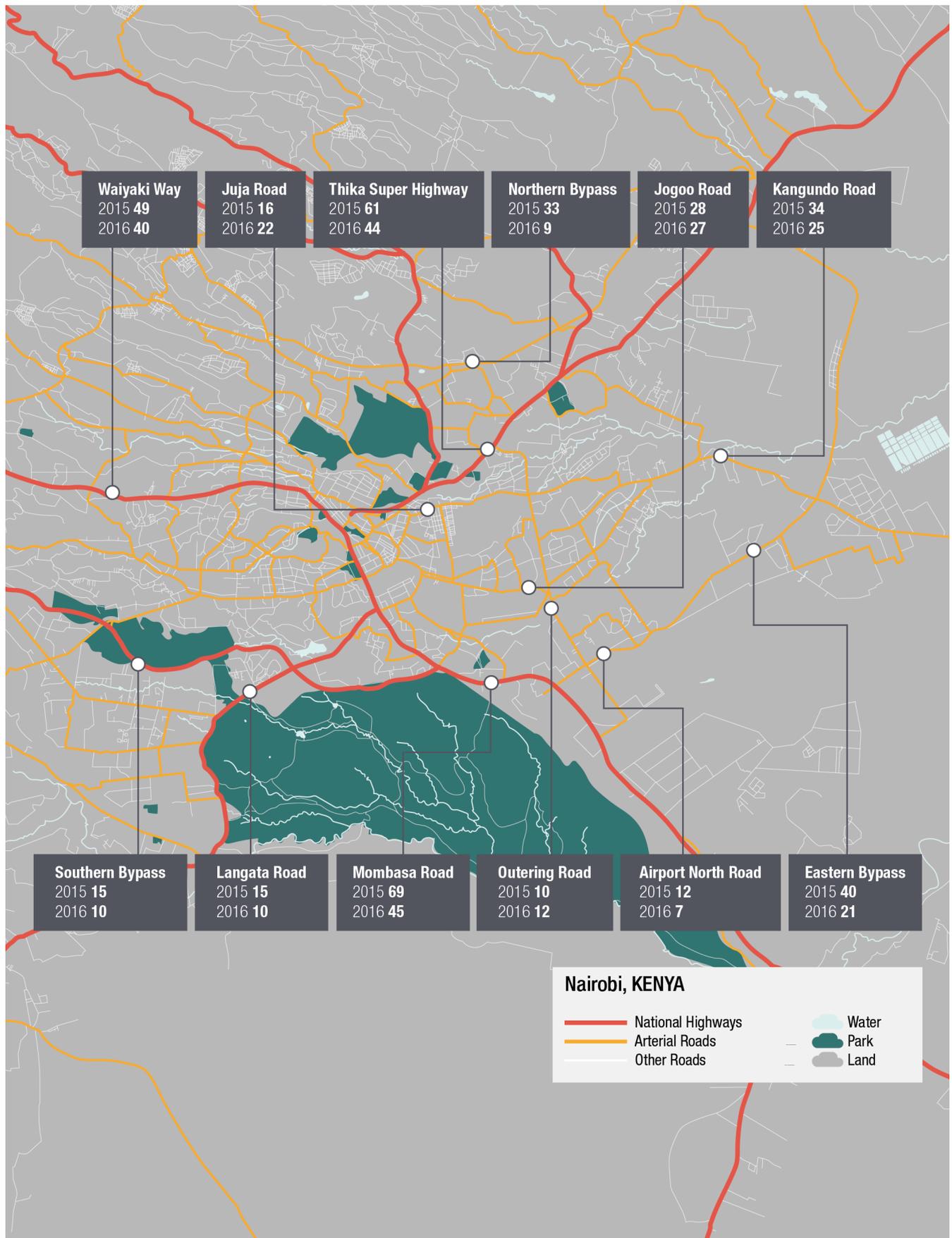


Source: Kayi, 2007, based on data from Aligula, 2005.

2 A survey of 2,105 households found that people living below the poverty line usually walk to work even though the journey might be 10–15 km (Koster, 1999, in Klopp, 2012).

3 More recent mode share data is not available.

Figure 3 Number of fatalities on Nairobi's high-speed roads, 2015–2016



Source: authors, based on data from NTSA, 2015 and 2016.

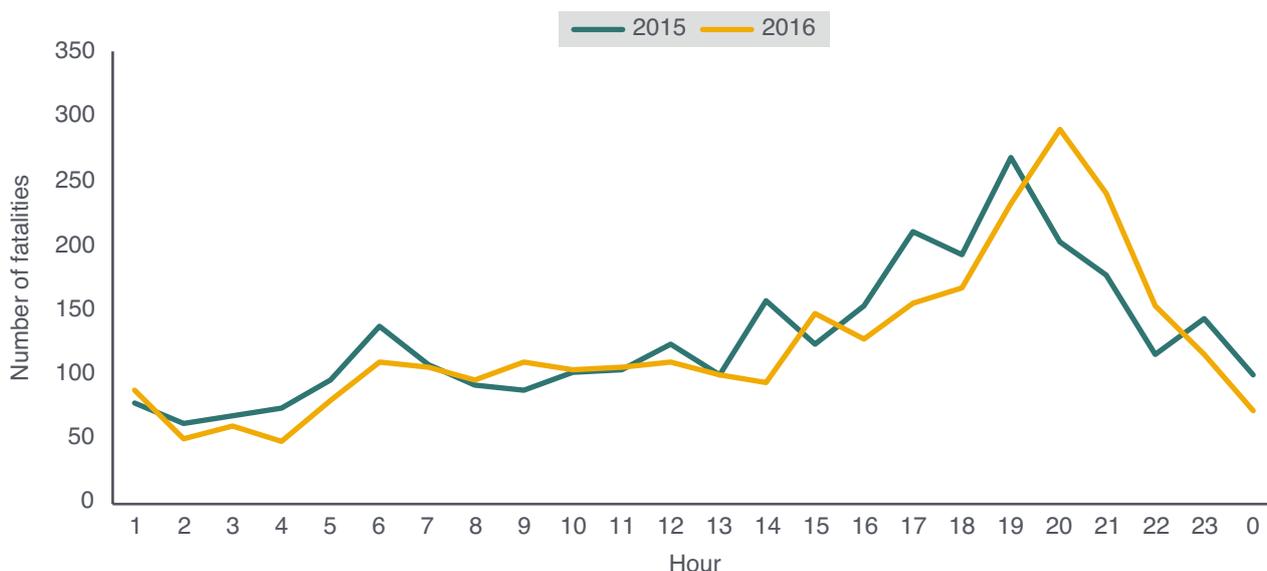
2016, tracking the very steep rise in motorcycle registration in the last decade (from 815 to 8,052) (NTSA, 2017).

Road safety data presents clear patterns regarding when and where traffic fatalities usually occur. Over half of fatalities in Nairobi in 2015 and 2016 happened on high-speed roads. The National Transport Safety Authority (NTSA) has identified 12 high-risk roads, which accounted for 57.2% of traffic fatalities in Nairobi in 2015 and 60.1% in 2016 (Figure 3). The NTSA 2015 Road Safety Status Report suggests that the renovation and expansion of the width of these roads have increased exposure of

people to vehicles and does not protect non-motorised vehicle users.

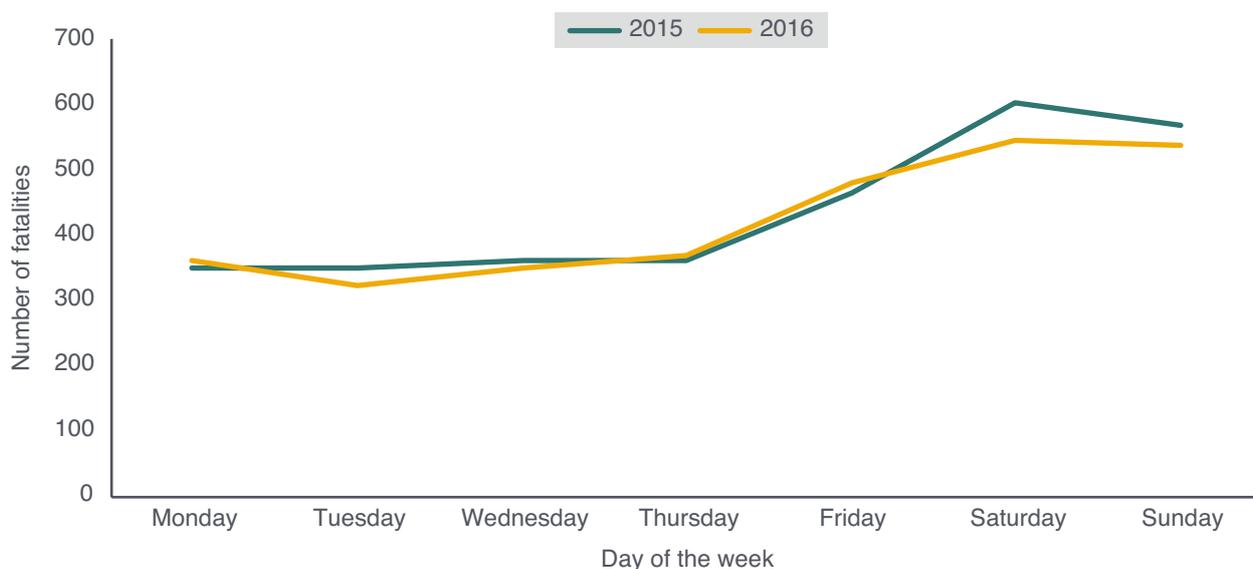
The data also suggests that collisions are linked to the time at which a person is travelling. In 2015 and 2016, most traffic collisions occurred between 17:30 and 22:00 (Figure 4). Fatalities also peaked at the weekend, with the highest frequency of fatalities in 2015 and 2016 occurring on Saturdays and Sundays (Figure 5). Interviews with road safety organisations in Nairobi suggested that fatalities are lower during weekday daytime hours because the congestion is worse and so vehicles are moving more slowly: at the

Figure 4 Distribution of fatalities over a 24-hour period, 2015–2016



Source: 2016 Road Safety Status report (NTSA, 2016).

Figure 5 Distribution of fatalities across the days of the week, 2015–2016



Source: 2016 Road Safety Status report (NTSA, 2016).

weekend and later in the evening, drivers can move more quickly. There are also reports of drink-driving being a problem during evenings and weekends (e.g. The Economist, 2016). At night, motorcyclists and pedestrians are thought to be at higher risk because of visibility, especially if they do not wear reflective clothing (NTSA, 2016).

The data on road safety in Nairobi (and Kenya) is collected by the NTSA. The NTSA began systematically collecting data on road traffic collisions in 2015 and this data is taken from traffic police records. Unfortunately, there are several weaknesses in the way in which this data is recorded and reported. The timeline for follow-up on the outcome of a collision is not clear: it may be from two weeks to 30 days – and if a victim dies in hospital, their death is unlikely to be recorded by the traffic police. Standardised classification for the severity of an injury is also lacking; rather, individual traffic police officers record injuries according to their own

assessment, making data on injury severity of limited use. Data for crashes that do not result in injuries may not be recorded at all, as motorists tend to agree on compensation without involving the police or insurance companies.

The available data is therefore likely to be an underestimation of the actual number of casualties and collisions. The World Health Organization (WHO) estimates the number of road traffic fatalities in Kenya in 2013 at 12,891 – more than four times the number recorded by the Kenyan police (3,191) (WHO, 2015).⁴ The low quality and lack of data are problematic for effective policy-making, and the lack of attention given to improving it suggests road safety is a low political priority. Unpacking the underlying politics of road use and mobility is critical to understanding why road safety continues to be an urgent problem in Nairobi and why it has not received the government attention it requires.

4 WHO uses a regression model including covariates such as road density, vehicles per capita, health system access and corruption index to calculate an estimation comparable with other countries (WHO, 2015). In its 2015 road safety status report, NTSA did compile data to meet WHO standards using risk exposure factors of motorisation and fatalities by population. However, this was not done in the 2016 status report. There are now discussions within the NTSA about how it can improve its data collection.

3 Why is road safety not a political priority?

The basic problem with improving road safety is that, to move efficiently around a densely populated space, many people in Nairobi choose to use a private vehicle. Private car use in Nairobi increased more than all other vehicle use between 2004 and 2013 (JICA, 2013).

Wealthier residents of the city can afford to own and use a private vehicle and cars are a symbol of social status. For an individual, buying their way out of the problem is the simplest option – especially when public transport options are considered less pleasant or convenient, and do not offer the added social status that car ownership does.

Those who are unable to afford a private vehicle must either pay to travel in a minibus (*matatu*) or on a motorcycle taxi (*boda-boda*). Where these options are also too expensive, individuals have no choice but to walk. This fragmentation in transport use means there is no strong collective demand for better public transport. Instead, individuals seek private solutions through car ownership, which leads to public demand for better roads rather than better transport.

Weak public demand for improved road safety in Nairobi is also because road safety is generally not considered the responsibility of the government but rather the individual – or even just an inevitability of life. Interviewees frequently described how people assume a traffic collision to be an act of God rather than taking personal responsibility for their actions. Consultations with those living and working on one high-risk road, the Thika Highway, found that some people wanted the government to introduce more crossing points and special lanes for motorcyclists. However, none of the interviewees questioned the construction of a high-speed, multi-lane road itself. Road conditions, competition for space between street hawkers and taxis, and human error continue to be blamed for collisions without a wider call for safer urban mobility options.

Roads are generally renowned for being popular investments for politicians, despite low political or public interest in road safety. Public demand for new or better roads is usually strong, and these constructions are visible, permanent and tangible signs of a government's action that may increase a politician's popularity (Wales, 2017). Public contracts for road construction also present opportunities for personal gain through kickbacks or rewards to political patrons (Wales, 2017). The political popularity of roads appears to be true for Nairobi where interviewees frequently commented that government funding is always

available for road construction but not for pedestrian facilities or road safety initiatives. Political support for new and faster roads is evident in the former government's construction of multi-lane, high-speed roads across the city, such as the Thika Road, Eastern Bypass, Northern Bypass, Southern Bypass and North Airport Road.

The political salience of roads was also made clear in Kenya's 2017 presidential elections, during which campaigning candidates promised to expand the country's road network. The Jubilee Party manifesto highlights the number of new roads built or under construction. There is, however, no mention of road safety. Unlike road construction, road safety initiatives do not generate visible outcomes, nor do they create opportunities for political credit and publicity. The resulting political and public popularity of roads, as opposed to road safety, are reflected in the Road Sector Investment Programme and Strategy 2010–2024 (RSIP) and the Metro 2030 plan for Nairobi, which prioritises investment in roads over public or non-motorised transport (Klopp, 2012). Box 1 provides a further example of how political importance given to high-speed roads can conflict with greater action on road safety.

Evidently, it is the most vulnerable road users – pedestrians, cyclists and motorcyclists – who are most frequently and severely affected by road safety problems. Yet, as the data shows, these people are often among the poorest and do not have the choice of a more secure mode of transport. The groups that would benefit most from public investment in and attention to road safety problems are also more likely to be less powerful and less well-connected to influential politicians and government technocrats. Not only is potential demand for greater road safety fragmented across social groups, but poor road safety (unlike congestion, for example) is experienced irregularly and by individuals rather than collectively. This further limits the likelihood of strong, collective demand from citizens for government to address the problem.

3.1 Finance for roads and road safety

The prioritisation of road construction is reflected in public funding allocations. National government budget allocations for spending on roads and transport are made by the Ministry of Finance and the Ministry of Transport with approval from the National Assembly. In June 2010,

Box 1 A campaign to improve school children's safety in Kenya

A recent campaign that sought to improve the safety of school children through amendments to the National Traffic Act demonstrates how political norms in Kenya affect public demand for road safety. The campaign, which involved a group of civil society organisations (CSOs) and supported by Kenya Bus and the Kenyan Red Cross, lobbied for improvements to school buses and reductions in speed limits around schools (from 50 km/h to 30 km/h) during times that children are entering and leaving school.

Advocates had assumed that this campaign would be uncontroversial: they did not imagine a policy to improve child safety would meet with any opposition. But they experienced several setbacks. To draw the attention of national government, the campaigners worked closely with a member of parliament and initially persuaded them to sponsor the bill. The MP later abandoned the bill, reportedly disappointed that the organisations would not offer a bribe for their support (according to an interviewee), and it faced opposition from other politicians who argued it would cause greater congestion and so damage the economy. The bill has now been approved but with speed limits kept at 50 km/h (Owino, 2017).

Organisations describe the difficulty of capturing politicians' attention on a road safety issue and that this is only possible if they have been personally affected road traffic collision or if you offer them a bribe. This campaign found that protecting motorists' ability to drive around the city quickly had more sway over politicians than measures to increase the safety of children when crossing the road.

182 billion Kenyan shilling (KSh) (US\$1.8 billion, at 29 January 2018) was allocated for infrastructure spending to cover roads, rail, ports, broadband and energy, of which nearly half was allocated to roads. Spending on roads has since increased and the 2017/18 budget shows road funding levels of 134.6 billion KSh (IEA, 2017).

The budget allocations to the national road agencies do not show how funds are used within specific road maintenance projects. Some projects allocate funds for road safety campaigns in the areas where roads are built but it is unclear what proportion of the budget is spent on this. In the ongoing Nairobi Outer Ring Road construction project, the Environment and Social Impact Assessment Report states that road safety campaigns, and the construction of footbridges and designated crossing points will be undertaken as a complementary initiative (AfDB, 2012). However, these measures were only included after residents raised concerns in stakeholder consultations that the number of traffic fatalities would increase when new roads were constructed, as has happened in other areas of Nairobi.

At the county level, the 2015/16 Nairobi County budget reports spending 11% of the County Roads department's total expenditure (7.2 billion KSh) on road safety interventions (Nairobi City County, 2016). It is not clear, however, how this was spent. The budget report suggests the expenditure refers to road maintenance and maintaining non-motorised transport facilities and street lighting.

Specific funding for nationwide road safety initiatives is allocated to the NTSA from the Ministry of Transport's budget. Budget documents⁵ show that the NTSA has been allocated 300 million KSh on an annual basis and this has increased slightly from 352 million KSh in the 2016/17 to 371 million KSh in 2017/18 (Nairobi City County, 2016). The NTSA has not received grants from development partners. The budget allocations at the national and county level indicate that the budget for the NTSA has not been

challenged, but that there is also sustained support at these levels for road construction and maintenance. The budgetary data does not, however, show whether the funds are being spent effectively or how more or less financing would affect road safety outcomes.

3.2 Justification for road investment

Government and donors often justify investment in road construction on economic grounds. For example, the RSIP estimates that every shilling invested in roads will generate 2 shillings and 60 cents in benefits (Ministry of Roads, 2010). The strategy is based partly on expected future vehicle numbers but does not include projections for non-motorised vehicles. A very small amount of funding is allocated to non-motorised vehicle facilities, road safety audits, and raising public awareness of road safety. The strategy notes that 'improvement in the roads under the RSIP will indeed create higher speeds and the potential threat of higher collision rates' and concludes that to mitigate this 'both drivers and pedestrians need to be more fully aware of traffic safety and traffic safety seminars in the road areas affected by the RSIP may be useful' (ibid: 68). There appears to be strong political will behind the strategy: the national government exceeded its road building targets for 2008/12 and 2012/15 (Bhatkal et al., 2016).

Support for public investment in road construction also comes from international donors and investors. In the early 2000s, around half of all funding for road construction and rehabilitation in Kenya was sourced from international donors, such as the World Bank, the African Development Bank (AfDB), the European Union and the Chinese government via grants and loans (Kaunda, 2014; Klopp and Makajuma, 2014). These donors work with the Ministries of Finance and Transport to inform decisions

5 2017/18 Annex of State Corporations Revenue and Expenditure and 2016/17 Annex of Approved Budget State Corporations.

on planning, conduct feasibility studies and support engineering design and road construction. Funding for transport infrastructure in Kenya has historically favoured motorised transport (Klopp, 2012) and donors appear to view investment in roads primarily from an economic development perspective, overlooking public health concerns and focusing on engineering technicalities instead. For example, the African Development Bank (2007) claimed that to address problems of congestion, slow journey times and high collision rates on Thika Road:

A limited access dual carriageway highway with four lanes on each side, traffic interchanges at existing roundabouts, and intermittent frontage service roads for local traffic - was found to be technically and economically the most adequate solution.

The appraisal briefly and vaguely mentions ‘social and environmental mitigation measures’ (ibid.). The

Thika Highway Improvement Project example (Box 2) demonstrates how donor and government investment has given importance to motorised traffic without due attention to the vulnerability of non-motorised transport users.

This report does not argue that all road construction and improvement is a bad use of public money, but rather that the continued prioritisation of road construction without consideration of the consequences for urban mobility and safety is a serious challenge for road safety. First, the recently constructed and expanded high-speed roads are where over half of all road traffic fatalities in Nairobi occurred in 2015 and 2016. Secondly, the large public budgets for these projects could mean that less money available for investment in mass public transport and non-motorised transport, which would reduce the need for private cars and motorcycles that are associated with road traffic collision. Thirdly, constructing more roads does not necessarily reduce congestion as is intended and does not challenge the popular preference for private vehicle use.

Box 2 The Thika Highway Improvement Project

This project was one of the first major highway construction projects in Nairobi and was officially completed in 2012. It was funded primarily by loans from the AfDB and a smaller contribution from the EximBank of China. The AfDB claims that the road benefits: commuters, in terms of reduced journey time; those working or studying at the Kenyatta University and Jomo Kenyatta University of Agricultural Technology, which are located near the road; and the informal traders who work close to the road (AfDB, 2012). The initial plan is reported to have come from the Nairobi Metropolitan Area Urban Transport Master Plan, which highlights the inadequacy of urban transport infrastructure in Nairobi and poor mobility on Thika Road (AfDB, 2007).

The road has proven controversial. It leads to the presidential home (and has been considered a ‘presidential ego project’) and has also benefited property developers in the area by raising house prices. The groups that have suffered from the highway construction are primarily low-income traders who were working in the Githurai market area. The highway construction reduced the space available in the Githurai market and, despite the importance of the marketplace for these traders, no alternative space has yet been created (Gichaga, 2016). Instead, traders now set up at the roadside, but some have been killed in traffic collisions (ibid.).

The AfDB appraisal report (2007), which recommended funding for the road’s construction, includes perfunctory comments on the displacement of small roadside businesses and the inclusion of a road safety campaign. But it nonetheless argues that ‘non-motorised road users will also be among the beneficiaries of the project’ and that ‘a large proportion of beneficiaries of the road project will be women most of whom sell horticultural products in the Nairobi Metropolitan Area transported from Thika area and beyond.’ The project appraisal explicitly references the high collision rate on Thika Road and articulates the expectation that the improvements will decrease the collision rate ‘by minimizing vehicle conflicts through interchanges and by providing separate service roads for local and non-motorized traffic.’

The AfDB appraisal describes a consultation process that included NGOs and CSOs but few organisations represent low-income groups in land development or transport planning issues, and media attention to such problems is also low (Gichaga, 2016). Since the project’s completion, the NGO Kenya Alliance of Resident Associations (KARA) and a small civil society organisation, Usalama Watch, have engaged with students living near the road and campaigned for better provision for vulnerable road users. In response, additional physical barriers such as barbed wire have been put in place to ‘encourage’ pedestrians to cross only at footbridges, which demonstrates how road safety measures still prioritise motorised vehicles. Other road users described how the road is dangerous and does not provide enough protection for motorcyclists or pedal cycles.

4 Why is government policy not more effective?

In recent years, road safety has gained more prominence in government policy and regulation in Kenya, perhaps due to growing international debate about this issue and concern over worsening congestion. In the last decade, various policies have been passed (Box 3) and in 2012, the government established the National Transport and Safety Authority (NTSA) to regulate the transport sector. Although greater regulation of vehicle and road use is important, government policy is limited in its effectiveness because it is poorly enforced and it overlooks underlying causes of road safety related to road design, land use and public transport.

4.1 Focus on individual responsibility

Firstly, the effectiveness of government policy on road safety outcomes is limited because it mirrors the common understanding that individuals must behave more safely if collisions are to be avoided. The focus of most of the new traffic and road use policies and laws has been on changing behaviour. The 2003 Legal Notice No. 161, for example, aims to regulate the public service vehicle subsector to reduce collisions caused by speeding and enhance the safety of commuters.⁶ It also seeks to ensure driver accountability and competence, and restrict vehicle operation to authorised routes (MOTC, 2004). Other recent laws and policies include a legal notice requiring all public service and commercial transport vehicles to be fitted with speed governors, and another requires *matatu* associations (known as Savings and Credit Cooperative Organisations – SACCOs) to submit quarterly reports on collisions involving their vehicles.

Government analysis of road traffic collisions also overlooks the underlying causes of the incidents. For example, the NTSA attributes the high number of pedestrian fatalities to a lack of adequate pedestrian facilities, drink-driving, drink-walking and poor enforcement of traffic laws (NTSA, 2017). Critically, this means that, while the NTSA has a wide remit of responsibilities, most of its activities concern regulation and public information. The NTSA does not have a strong role in road design or urban development or mobility planning, which continue to be conducted by other

government agencies and with little consideration for road safety. For example, an international survey of road quality found that nearly all roads surveyed in Nairobi had high numbers of pedestrians but only 20% had sidewalks (Silverman, 2016). Likewise, high-speed road construction projects in Nairobi often neglect to include infrastructure provisions for non-motorised transport because they are designed for high-speed vehicle transport only (Becker, 2011). This is despite the fact that such roads pass through developed areas where pedestrians, informal street traders and vehicles compete for space along the roadside (Gonzales et al., 2009).

The NTSA has a mandate to review road construction plans from a road safety perspective. But there are currently no standard processes for safety audits of road design and plans are not automatically passed to the NTSA for its approval. The NTSA can give policy advice to other government departments and make recommendations on road design. But the NTSA has little authority within government, and its recommendations on the policy and plans of other government bodies, such as the national road agencies, can be ignored.

4.2 Corruption and poor enforcement

The second problem that limits the effectiveness of government regulations is its poor enforcement. The traffic police have primary responsibility for implementing traffic regulations but significant corruption undermines the usefulness of regulation (Chitere and Kibua, 2012; Imboga, 2015). It is widely understood that if a motorist is stopped by the police, they may avoid prosecution by paying a bribe to the officer in the street. These bribes may come from individual motorists but also from public service vehicle drivers, who have a ready supply of cash from their passengers' fares. One particular problem is that some *matatu* owners are active or retired police officers, which affects both the interest and ability of other officers to police these vehicles (Imboga, 2015; Klopp, 2012).

The traffic police department does not deny that corruption exists, but blames both the individual traffic officer and the bribe giver. There are anecdotes of creative subversion of traffic regulation by motorists. For example,

⁶ 'Public service vehicle' is the term commonly used to refer to privately owned minibuses and other buses which offer transport to paying customers.

Box 3 Key initiatives in policy and governance, 2002–2017

2002	Integrated National Transport Policy: Moving a Working Nation
2003	Legal Notice No. 161, on public service vehicle regulation
2008	Nairobi Metro 2030: A World Class African Metropolis
2010	Road Sector Investment Programme & Strategy 2010–2024
2012	Act No. 33 establishes National Transport and Safety Authority
2012	Urban Development Master Plan for Nairobi City
2013	Legal Notice No. 219, on NTSA Regulations (operation of public service vehicles)
2013	Legal Notice No, 217, on speedometer use in vehicles
2014	National Transport and Safety Authority Regulations (operation of motorcycles)
2015	Non-Motorised Transport Policy for Nairobi
2016	Legal Notice No. 161, on fines for minor traffic offences
2017	Nairobi Metropolitan Area Transport Authority created

since the 2012 Road Safety Act, traffic police have been using roadblocks with breathalysers to check drivers' alcohol consumption to reduce drink-driving. One interviewee considered this to be a successful, though costly, intervention. But there are also reports of people circumventing these roadblocks. Allegedly, there is a Facebook page on which users warn drivers where the roadblocks are so they can avoid them when driving home drunk, and of a network of entrepreneurial drivers who will drive drunken drivers through the roadblock in their own car and then leave them to drive themselves the rest of the way home (Economist, 2016). This culture of corruption not only undermines the effectiveness of traffic regulation, but may also reduce public respect for road use legislation and may engender resentment among those drivers that do obey traffic rules.

4.3 Opposition from the *matatu* and *boda-boda* sectors

Direct opposition from the *matatu* sector also limits the effectiveness of traffic legislation (Nderitu, 2017). The *matatu* sector is represented by the Matatu Welfare Association (MWA) and the Matatu Owners Association (MOA), formed in 2001 and 2003, respectively. The MOA represents the interests of investors in the *matatu* industry and is the larger, more powerful organisation. The MOA has used legal opposition and strikes to challenge the introduction of new legislation, including the 2004 requirement for public service vehicles to have seatbelts due to the associated upgrade costs (Chitere and Kibua, 2012).

But in 2004 the then Minister of Transport, John Michuki, who had a reputation for taking forceful action against law-breaking, succeeded in suspending drivers caught breaking safety regulations (Chitere and Kibua,

2012). Michuki reportedly benefited personally from enforcing the legislation since he was a prime supplier of seatbelts to the *matatu* owners. Nevertheless, seatbelt use and the use of speed governors are said to have improved during his tenure although compliance has since waned (Business Daily, 2016). This example suggests that while traffic regulations may be politically unpopular, political leaders may choose to enforce them if there are direct personal gains to be made.

The interests of the MOA regarding road safety are mixed. The Association represents the owners of the *matatus*, not the drivers and touts, and road safety legislation is important for owners who do not want their vehicles to be damaged in collisions. However, owners also want their vehicles to make as many journeys, carrying as many passengers as possible to generate the greatest profit. This puts pressure on drivers and touts to work long shifts, use stimulants to keep working, find shortcuts, drive at high speeds and carry too many passengers.

More recently, the MOA chair reportedly backed new traffic legislation because it provided an opportunity for profit instead of added cost. The chair (in the style of former Minister Michuki) backed the introduction of speedometers in *matatus* and sold the speedometers to other *matatu* owners. A similar alignment of personal business interests is now occurring in relation to the proposed introduction of a bus rapid transit (BRT) system. The MOA chair is heavily engaged in political negotiations over who will own and run the new buses. The expected introduction of the BRT could threaten the *matatu* industry's profits but it also presents *matatu* owners with a business opportunity if they can also own the new buses used for the BRT system. By capturing the commercial interests of *matatu* owners, changes to vehicle legislation and public transport that might otherwise be met with contestation can be facilitated.

The *boda-boda* drivers, like the *matatu* drivers, are often accused of flouting traffic regulations and causing collisions. *Boda-boda* drivers also aim to make as many journeys as possible in one shift to collect as many fares as possible, which incentivises risk-taking behaviour. However, *boda-boda* drivers also personally carry the cost if they are in a collision or are apprehended for misconduct. As such they have greater interest in engaging with the NTSA to avoid fines and collisions. The Boda Boda Association, registered in 2015, is now working with the Ministry of Transport, the NTSA and NGOs to discuss road safety issues. Here, there is potential for constructive dialogue about the need to improve driver behaviour, but also about how to meet the needs of motorcycle drivers regarding safe road space, shelters at designated pick-up points and training.

In summary, the challenges of enforcing government legislation mean that drivers are often not penalised for dangerous road use. This means there is little incentive for other drivers to obey the rules. Widespread corruption in the traffic police makes a mockery of traffic regulation and supports a culture of disrespect for rules. Furthermore, the difficulties of regulating the *matatu* and *boda-boda* sector mean that passenger experience of public transport is poor, and public transport has a bad reputation. This is likely to fuel aspirations for personal transport and makes a demand for public transport less likely. Yet, if private vehicle use continues to increase, the struggle for road space will also continue, exacerbating demand for more high-speed roads, rather than more efficient and safer mass-transit.

5 How planning and design affects road safety in Nairobi

While road and transport design are widely recognised as important factors shaping road safety (Wales, 2017), there are multiple barriers to ensuring that safety is considered in Nairobi's road and transport design. These barriers include institutional mandates and government coordination as well as political and personal interests that may be at odds with government intervention.

In Nairobi, the major roads classified as highways and managed by the Kenya National Highway Authority (KenHA) include Mombasa Road, Southern Bypass and Thika Superhighway (see Methodology). Nairobi's designated urban roads, managed by the Kenya Urban Roads Authority (KURA), include the Ngong road, Northern Bypass, Eastern Bypass, Waiyaki Way and Outer Ring Road (see Methodology). KURA is also mandated to construct 17.2 km of non-motorised transport lanes in Nairobi, and to work with the police to manage traffic and road safety in urban areas. All remaining roads are managed by the Nairobi County Government which has a Public Works, Road and Transport department to oversee all matters related to roads, street lighting, traffic, parking and public road transport. The county council committee with the political leadership of this department directs policy and interventions on road safety at the county level.

This governance structure means that road design and maintenance decisions are split across three government bodies, and divided between county and national governments and political leaders. If the NTSA is to ensure that safety is considered in the planning, design and maintenance of all roads in Nairobi, it must work closely with KURA, but also with KenHA and the county government. The challenge here is that, as discussed, the NTSA has little authority within the Ministry of Transport or over the other agencies or county government, which are more heavily influenced by the political salience of road construction.

Road safety in Nairobi is also relevant to the work of the newly formed Nairobi Metropolitan Area Transport Authority (NAMATA). The Authority's primary focus is on advancing the plans for a bus rapid transit (BRT) system (Box 4). One NAMATA engineer emphasised the importance of improving public transport but also of making more space for non-motorised transport to increase mobility and safety in Nairobi. They stated strongly the need to turn road space into safe walkways for pedestrians, given that walking accounts for at least 50% of the mode share in Nairobi, and there are reportedly plans to widen walkways in the central business district to improve walking safety and comfort in this area.

NAMATA is in a strong position to enforce decisions and implement transport plans, potentially with consideration for vulnerable road users. An NTSA representative works in NAMATA, which raises the possibility of coordination and collaboration between national action on road safety and Nairobi metropolitan area transport planning. NAMATA can access funds from national government, the five council budgets, and from donors or private sector actors, and its board includes the governors of each county council as well as the Cabinet Secretary for Transport, which boosts its political power.

NAMATA is, however, a very new organisation and is yet to demonstrate its capability or priorities with respect to road safety. Its formation – from agreement in the 2014 memorandum of understanding to its creation in 2017 – involved long negotiations between the five counties' respective governors over the scope of NAMATA's mandate and how it would be funded. The slow political process behind its creation suggests that NAMATA's efficiency in delivering its mandate could be limited by political wrangling over each county's financial contributions, and their respective benefits and responsibilities.

Box 4 Negotiating the introduction of a bus rapid transit system

Plans to develop a bus rapid transit (BRT) system in Nairobi have been under discussion for several years but now appear to be progressing. Government officials have visited other cities with a BRT system, including Bogotá, and there appears to be political support for such a system in Nairobi.

But delays to planning and construction are reportedly due to unresolved questions of who will pay for, operate and manage the new system. One interviewee commented that, as construction may take longer than a single four-year election term, political leaders risk investing public money without being able to take the credit for its completion. There are conflicting reports on whether national or county governments will finance the construction and subsidise fares or whether the system is expected to recover its costs.

It is also not yet clear how the BRT may affect the *matatu* industry. One possible model is for the system to be run by the Matatu Owners Association (MOA), or to allow the MOA to buy shares in the system. MOA has already started investing in buses for the project with the clear intention of controlling bus operation, and they have been approached by a bus manufacturer and an international bank offering finance. Interviewees said the MOA is not opposed to the BRT system if it can run it and therefore not lose market share in urban transport.

Individual *matatu* drivers and touts (who encourage passengers onto buses) may not be absorbed by the new system, however – though *matatus* are expected to provide feeder services to the BRT pick-up points and continue to service the routes not served by the BRT. The challenge with allowing *matatu* owners to run the new transport system is that, according to interviewees, they lack management skills. Some interviewees commented that if the MOA is allowed to run the BRT, poor bus maintenance or unreliable schedules could cause the project to fail.

Despite the negotiations over financing and operation, one government interviewee was confident that construction would begin soon. NAMATA is now responsible for driving the project forward and, with five county governors and the Minister of Transport on the its board, there should be little government opposition to its decision-making. Those benefiting from the project are expected to be commuters who are currently dependent upon *matatus*, politicians associated with its development and financing (in particular, the new Nairobi County Governor), the MOA chair and other road users, as congestion is reduced.

6 Addressing the broader urban development challenge

Decisions on road design and transport are symptomatic of wider challenges associated with rapid urban growth and land use. Urban development in Nairobi is not strategic. Despite the existence of an independent Land Commission and the formulation of urban masterplans – including those supported by international actors – disagreement over land ownership is common and private commercial interests can distort formal development plans (Becker, 2011). This allows the city to sprawl as peripheral land is developed informally and at low-densities to meet the growing population’s demand for housing (World Bank, 2014). The sprawl contributes to long-distance commuting and while the *matatu* industry emerged to service these transport needs, it is relatively unregulated and inefficient (Klopp, 2012). The resulting mobility challenge affects all Nairobi residents who experience the problem of congestion on a regular, if not daily, basis. The collective need for improved mobility is therefore strong. But rather than calling for more efficient public transport and strategic land-use planning, demand focuses on faster roads and individuals aspire to car ownership. This contributes to the political salience of road construction at the expense of investment in road safety and public transport.

The transport sector is also beset by private commercial interests that influence formal decision-making processes. The gradual increase in regulation of the *matatu* sector was only possible when new legislation led to personal financial gain – for example, through the sale of seatbelts and speed governors. Likewise, negotiations between the government and the MOA over who will own and run the proposed new BRT system are pivotal in allowing or preventing the introduction of a new formal transport system and of greater regulation. The *matatu* sector could oppose the BRT, on the grounds that it will prevent *matatus* from servicing the city centre and reduce their market share, but the system also offers the potential for *matatu* owners to profit, provided they can agree a role in ownership and operation (Box 4).

Finally, civic action on road safety takes place in a political culture where accountability between Kenyan politicians and citizens is weak and shaped heavily by personal ties rather than electoral promises or citizens’

rights (Burgess et al., 2010). Client-patron relations affect all areas of public office, and personal connections and private interest often trump formal policy and law (Wanyama and McCord, 2017). With respect to road safety, this political culture is seen to undermine regulation over land and road-use, and changes to the transport system, as well as creating difficulties for civil society groups to lobby for government intervention.

Public action on road safety in Nairobi is relatively minimal but there is a community of CSOs engaged in demanding improvements to road safety, with some support from international organisations. However, civil society calls for increased government attention to road safety encounter difficulties in gaining political support. The major highways and large urban roads are controlled by national government while county governors and members of county assemblies now have more power over how local resources are allocated to road construction and maintenance (Bhatkal et al., 2016). This means that, to shape road safety and road design in Nairobi, the priorities and political networks of elected representatives at both the county level and at the national level are important. Accessing and influencing these individuals and their decisions can be a challenge for CSOs, which may not personally be connected to those in power.

The political difficulty of achieving government action on road safety can be seen in the efforts of the ‘Share the Road’ programme to introduce a new non-motorised transport policy for Nairobi. Share the Road was led by the United Nations Environment Programme (UNEP) in collaboration with the Kenya Alliance of Resident Associations (KARA), a large NGO formed in 2000, and with funding from the FIA Foundation. KARA began campaigning on non-motorised transport issues as part of its work on congestion, poor transport planning and road safety for its members. KARA and UNEP worked with members of the Nairobi County Assembly to develop a non-motorised transport policy for Nairobi.

As a KARA member explained, the organisation knew that, for the policy to be approved by the Nairobi County Assembly, they would first need to convince individual assembly members of the importance of non-motorised

transport. To do this, Share the Road organised a two-day workshop for members of the County Transport Committee to explain the policy and its importance. They argued that 50% of journeys made in Nairobi are made on foot and yet there is very little investment in non-motorised transport. KARA tried to persuade the assembly members to support the policy on the basis that it would improve air quality, reduce car use and the number of people killed in traffic crashes, and boost the members' political standing. They also tried to persuade members of the county assembly that getting the policy approved would be their legacy in the Council's transport sector, which would give them political popularity and visibility. According to KARA, some County Transport Committee

members initially resisted and asked to be paid to support the policy. Share the Road refused to pay bribes, continued to lobby and won the support of the Committee chair. The policy was finally passed in 2015 and KARA, UNEP and other stakeholders are now working to make sure it is put into practice.

This example demonstrates how, despite competing interests, the creation of new governance structures, competing interests and persistent lobbying by an alliance of stakeholders can drive improvements in Nairobi's policy for transport and road design. While these changes may not directly target the most vulnerable road users, they are at least opportunities for improvements in road safety at the city level.

7 Recommendations

Who needs to employ strategic interventions to overcome resistance to improved regulation and road and transport design? Recent improvements in road-safety legislation and investments in public or non-motorised transport have not been driven by data on road traffic collisions.

Rather, the driving forces that emerged frequently in discussion with Nairobi stakeholders were:

- public frustration with congestion
- public awareness of a collision hot-spot
- opportunities for personal financial gain and political credibility
- pressure from international organisations.

It is difficult to trace these processes of change accurately without further research, but using these as a basis, we suggest four potential entry points to change for local and/or international organisations addressing road safety.

The situation in Nairobi is constantly evolving. Since this research was conducted, a new governor of Nairobi has been appointed, advances have been made with the BRT and new urban management boards have been announced – all of which are likely to have an influence on road safety outcomes. Alongside the recommendations, it will be important for those working on road safety to be able to consider how such changes, within and beyond formal government, can create new opportunities and challenges for improvement in road safety in the city.

7.1 Road safety assessments

Within Nairobi, many fatal road traffic collisions occur on high-speed roads. To address safety issues on these major roads, the NTSA is trying to increase its influence across national road and transport bodies. The NTSA aims to amend the 2012 Road Traffic Act to give greater strength to its road safety assessing role. This is also a key demand of the 2015 NMT policy for Nairobi. The International Road Assessment Programme has begun work with the NTSA on assessing road designs but the NTSA require greater authority to make the recommendations from their assessments obligatory.

To increase the legal power of road auditing and assessing, **international actors such as International Road Assessment Programme and the World Bank could partner with politically engaged local organisations to encourage the national government to make road safety**

assessments obligatory and their recommendations enforceable. An initial activity could be, as one NTSA interviewee suggested, a roundtable or forum in which road safety concerns could be discussed with others working on road construction and design to share perspectives and understand each other's priorities. The current collaboration between international donors and the Kenyan government on road construction and design and the apparent willingness of NAMATA to engage on road design issues suggests that there may be potential for road safety assessments to gain greater importance, at least in Nairobi, as a starting point.

7.2 Road redesign for BRT construction

The redesign of city-centre roads to accommodate the construction of Nairobi's bus rapid transit system is an opportunity to improve cross-agency coordination and increase the authority of the NTSA. Five major roads must be redesigned and reconstructed for the BRT, and the process involves various stakeholders including the MOA and donors. NAMATA – the agency responsible for the design and implementation of the BRT – is also charged with implementing the 2015 NMT policy, which should be integrated with the BRT plans.

CSOs and NGOs should review the proposed BRT designs and assess their attention to road safety issues. NTSA has a representative in NAMATA who could use the BRT as a high-profile opportunity to conduct a road safety audit or assessment. Technical support from International Road Assessment Programme and the Japan International Cooperation Agency could be useful, especially because the latter has already produced detailed road designs for safer urban mobility in Nairobi. As the plans are operationalised, **there could be ongoing opportunities for the NTSA and other advocates to monitor progress and hold NAMATA to account on the non-mobilised transport policy provisions.**

Reflecting on previous NGO-led campaigns, politicians concerned that traffic speeds would be reduced may oppose demands for safer road design and road safety assessments. Politicians are also likely to demand payment for supporting changes to the 2012 Road Traffic Act. But Share the Road's experience suggests that persistent lobbying without the use of bribes can be successful. The high-profile nature of the BRT may also encourage greater attention to road design as it offers an opportunity for national politicians to promote Nairobi's progress.

7.3 Inter-county competition on road safety

Since the 2010 Constitution, county councils have had responsibility for road safety and maintenance over smaller roads in their jurisdiction. Some CSOs hope that this devolution will increase their influence locally, enabling them to work with the county roads and transport committees and the county assemblies, as the Share the Road programme did to pass the non-mobilised transport policy for Nairobi County. In Nairobi, working with the county government and assembly on road design and safety issues may be particularly important as it is now part of NAMATA.

Working within NAMATA will give the county government influence over transport planning and road design for the whole metropolitan area, and connect county-level actors to national road agencies and the NTSA. This new governance structure may in turn enable CSOs and NGOs to use contacts at the county level to influence decision-making in less accessible government bodies. It is currently difficult to persuade Nairobi county councillors to address road safety. But, as this study found, politicians are more likely to support interventions on road safety, if there are opportunities for personal or political gain.

One approach to create a sense of political gain could be through fostering competition. **Organisations such as the World Bank or the WHO could work with the NTSA to develop indicators for measuring the quality of county-level road safety policies and outcomes.** These scores could then be used to rank counties on their performance. Media outlets such as the *Daily Nation*, which is already supportive of action on road safety, could **publicise the performance of different counties and praise or shame them accordingly.** Increased public awareness of a county's relative road safety record may increase or lessen county politicians' political credit. There are similar international initiatives to reward countries performing better on road safety and urban sustainable transit which appear to motivate political action (Scruggs, 2017).

7.4 Self-regulation by *boda-boda* drivers

Motorcycle use is increasing, and motorcycle users are second only to pedestrians in their risk of involvement in traffic collisions and fatalities. Regulation of motorcycles has gradually increased but its enforcement is undermined by the need of drivers to move around the city as quickly

as possible, and by the limited effectiveness of the traffic police. As this study has found, aligning the personal incentives of *matatu* sector with new traffic regulation can be successful in improving compliance. **The recent formation of the Boda Boda Association of Kenya presents new opportunities for government regulation to similarly align with the needs of motorcycle taxi drivers.**

The Association is keen to improve the safety of its members and improve their reputation so this interest may be leveraged to **explore ways of encouraging *boda-boda* drivers to use designated pick-up points and adhere to road use regulations.** For example, *boda-boda* drivers complained of the cold conditions of their work so if the county government provided shelters at designated pick-up points, drivers may be more willing to use them and less likely to obstruct pedestrians by parking on sidewalks. Donors and NGOs could play a role by facilitating dialogue between the Boda Boda Association and the NTSA, NAMATA, Nairobi County Government and other relevant government bodies.

7.5 Unanswered questions

This study reveals the breadth of issues affecting road safety outcomes in Nairobi and could not address all of them sufficiently. Many questions remain unanswered which would be useful for better understanding what is driving progress in road design, urban mobility, and safer road use. The following questions require further research to better understand what enables and limits improvements to road safety in Nairobi:

- How are plans and designs related to road construction, expansion and maintenance; urban transport; and land use developed by the different government agencies. What is prioritised and whose ideas guide these separate decision-making processes?
- What motivated and enabled the government to enhance formal policy and legislation on road safety?
- How is NAMATA positioned to influence road as well as transport design, and what would enable road safety to have greater influence in these decisions?
- What is the attitude of different population groups in Nairobi towards improved public transport?
- How can data be simply and cheaply improved so that policy-makers and planners have a better understanding of how, why and where collisions occur?

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