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Final Report: Accelerating COVID-19 related 'best practice' in the urban motorcycle taxi sector in Sub-Saharan Africa

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Abstract

This report provides insight on the impact of the COVID-19 outbreak on the urban motorcycle taxi sector in Sub-Saharan Africa. Primary data were collected in six countries – three in West Africa (Sierra Leone, Liberia and Ghana) and three in East Africa (Uganda, Kenya and Tanzania). A mixed methods approach was used, conducting qualitative interviews with key stakeholders/ informants relevant to the urban motorcycle taxi sector, while short surveys (approximately 60 per country) were conducted with the motorcycle taxi operators. Country and regional findings were presented to and discussed among the researchers, motorcycle taxi riders and key stakeholders in a series of (online) workshops. Disaggregated and aggregated reports and an aggregated policy brief were produced based on the data and workshops.

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CONTENTS

EXECUTIVE SUMMARY iv

1. Introduction 1

1.1 Background 1

1.2 Project aims and objectives 1

1.3 Transport challenges being addressed during/ post-COVID-19 1

1.4 Alignment with the HVT Programme 2

1.5 Alignment with FCDO priorities 2

1.6 Low-income country (LIC) beneficiaries 2

2. Approach and methodology 3

2.1 Summary of approach 3

2.2 Methodology 3

2.3 Innovation 4

3. COVID-19 and transport in the six case study countries 4

3.1 Introduction 4

3.2 How COVID-19 developed and affected the case study countries 4

3.3 Transport-related COVID-19 measures introduced by the six governments 7

3.4 Informal/ unofficial transport-related COVID-19 measures taken in six case study countries 10

3.5 Size of the motorcycle/ tricycle taxi sector 11

4. Perspectives of key stakeholders on COVID-19 and the motorcycle taxi sector 13

4.1 Introduction 13

4.2 Impacts of COVID-19 on urban transport 13

4.3 Impact of transport-related measures and consultations of the sector 16

4.4 Social or technological adaptations made by motorcycle taxi operators 19

4.5 Useful lessons from previous health crises 22

4.6 Motorcycle taxis as a low-risk means of transport? 23

5. Findings of motorcycle taxi operator surveys 24

5.1 Findings 24

6. Research uptake and next steps 33

6.1 Research uptake/ dissemination activities 33

6.2 Planned next steps 33

6.3 Low-income countries planned for upscale 33

7. Conclusion 34

8. Bibliography 35

APPENDICES

Appendix A: Key stakeholders interviewed 38

Appendix B: Key stakeholder questions 41

Appendix C: Motorcycle/ tricycle operator questions 43

TABLES

Table 1: Number and location of motorcycle/ tricycle taxi surveys 25
Table 2: Journeys made per week during COVID-19 era 25

FIGURES

Figure 1: Restrictions introduced during COVID-19 lockdown 25
Figure 2: Impact of COVID-19 on the MCT/ MTT profession 26
Figure 3: Enforcement now compared to normal times 26
Figure 4: Adherence to COVID-19 restrictions 27
Figure 5: Who enforced the restrictions 27
Figure 6: MCT/ MTT Union consultation 28
Figure 7: Trust in the MCT/ MTT Union 28
Figure 8: Trust in governments 29
Figure 9: Trust in the Ministry of Health 29
Figure 10: Trust in the army/ police 30
Figure 11: Communication of restrictions 30
Figure 12: Perceptions about COVID-19 31
Figure 13: Social innovations taken to reduce the spread of COVID-19 31
Figure 14: Technological innovations used to reduce the spread of COVID-19 32
Figure 15: Previous experience with health-emergencies 32

ACRONYMS

CBO	Community Based Organisation
FCDO	Foreign, Commonwealth and Development Office
FGD	Focus Group Discussion
HVT	High Volume Transport Applied Research Programme
IMC	IMC Worldwide Ltd.
LATRA	Land Transport Regulatory Authority (Tanzania)
LIC	Low-income Country
MAAK	Motorcycle Assemblers Association of Kenya
MCT	Motorcycle Taxi
MTT	Motor tricycle Taxi
SACCO	Savings and Cooperative Organisation
SHG	Self Help Group
SLCMBRU	Sierra Leone Commercial Motor Bike Riders Union
SLRSA	Sierra Leone Road Safety Authority
SLTCA	Sierra Leone Commercial Tricycle Association
SSA	Sub-Saharan Africa

EXECUTIVE SUMMARY

This report provides insight on the impact of the COVID-19 outbreak on the urban motorcycle taxi sector in Sub-Saharan Africa. Urban motorcycle taxi operators in Sub-Saharan Africa provide essential transport services, and in many cases have shown ingenuity and an ability to adapt and innovate, when responding to different (health) challenges. However, policymakers and regulators – according to this report's observations and supported by the literature – often remain somewhat hostile to the motorcycle taxi sector. The report discusses the measures and restrictions put in place to reduce the spread of COVID-19 relevant to this sector and explores motorcycle taxi operators' perceptions of the acceptability of these restrictions and the extent to which they feel their sector has adapted and adhered to them.

For this report, primary data were collected in six countries – three in West Africa (Sierra Leone, Liberia and Ghana) and three in East Africa (Uganda, Kenya and Tanzania). A mixed methods approach was used, conducting qualitative interviews with key stakeholders/ informants relevant to the urban motorcycle taxi sector, while short surveys (approximately 60 per country) were conducted with the motorcycle taxi operators. Country and regional findings were presented to and discussed among the researchers, motorcycle taxi riders and key stakeholders in a series of (online) workshops. Disaggregated and aggregated reports and an aggregated policy brief were produced based on the data and workshops, which were made available to the participants before being posted on a website (www.africawheels.org) created by the researchers to disseminate the findings and make inter-city and inter-regional peer-to-peer learning possible.

Key facts

Most case study countries recorded relatively few COVID-19 cases and reported only a limited number of COVID-19 deaths. By the end of 2020, no case study country had yet experienced a clear 'second wave'.

All countries responded to the pandemic with a series of measures and restrictions, in (partial) lockdowns, curfews, closure of schools, offices and shops, etc. However, the duration and severity of the measures varied significantly from country to country, with Uganda having one of the strictest sets of regulations while Tanzania had one of the most relaxed sets of regulations.

Governments responded with a series of restrictions and measures for the public transport sector, such as physical distancing/ restricting number of passengers, bans on travelling and/or restricting non-essential travel, and prescribing the use of hand sanitiser and face masks.

Key findings

The health, psycho-social, and economic impact of COVID-19 and the measures taken to limit its impact were significant, putting a strain on the lives and livelihoods of millions of people, including motorcycle and motor-tricycle taxi operators.

In most cases measures were formulated in a non-consultative manner, although in Sierra Leone the government did consult the transport sector, including motorcycle taxi unions.

Motorcycle taxi operators in general indicated that COVID-19 had a negative impact on their livelihood activities, due to direct restrictions and reduced demand, but some reported an increase in activity due to this means of transport's ability to bypass police and army controls.

There were varied degrees of compliance with COVID-19 restrictions over-time, ranging from high levels of compliance in the initial phases to limited/ more symbolic compliance later.

Limited or non-compliance was often due to necessity (to have some income) rather than an unwillingness to abide by the rules.

Innovations by the motorcycle taxi operators were limited, and mainly restricted to simply attaching a bottle of hand-sanitiser to the motorcycle or spraying the inside of passenger helmets with disinfectants. However, use of mobile phone-based apps (for fee payment and to book Transport on Demand services) increased in most places.

Key recommendations

The violation of transport restrictions by motorcycle/ tricycle operators was mainly caused by necessity, due to lost livelihoods and limited capacity to absorb financial shocks. Providing a financial safety-net for MCT/ MTT operators would result in higher compliance with COVID-19 measures.

The formulation of COVID-19 restrictions by the governments were generally done without proper consultation of the MCT/ MTT sector. More engagement with the sector and its representatives during normal times would have allowed for rapid inclusion of the sector's perspectives in times of a (health) emergency.

Communication of COVID-19 restrictions by the governments to the MCT/ MTT operators was not always sufficiently clear. Closer collaboration with the MCT/ MTT unions and further use of a wide range of media and social media means would have reduced confusion over the COVID-19 regulations and restrictions.

MCT/ MTT unions are considered to be the most trusted institutions by the operators. Hence, further collaboration between these institutions and the police, army, Ministries of Health and Government more generally, would result in better compliance with the COVID-19 rules and regulations.

The use of mobile phone and internet technology by MCT/ MTT operators and passengers increased during the COVID-19 period. The Government should support this further as there a number of benefits to this which are not limited to periods of health emergencies. Mobile payments to facilitate access to micro-credit loans for operators and ride hailing apps allowing for safety monitoring are just two examples.

1. Introduction

1.1 Background

In the last 25 years or so, motorcycle taxis (MCTs) – and more recently motor-tricycle taxis (MTTs) – have fundamentally changed mobility and access in urban Sub-Saharan Africa, providing rapid and door-to-door transport, supporting livelihood activities, and facilitating access to essential services, such as health, markets and education. In many African cities, motorcycle taxis – often referred to as *Okadas* in West Africa or *Boda-bodas* in East Africa – are responsible for the majority of transport movements of both people and goods and provide hundreds of thousands of jobs to often low-skilled and/or marginalised youth. Urban motorcycle taxi operators provide essential services, including to key workers during this COVID-19 epidemic, but also experience risks of contracting the virus and spreading it, due to their close and frequent interactions with customers. Understanding the impact of COVID-19 – and of the measures taken to mitigate the spread of the virus – on this widespread intermediate form of transport is crucial for planning, managing and operating urban transport services, so that essential services remain accessible for urban dwellers during periods of lockdown or curfews.

While MCT operators have in many cases shown ingenuity and an ability to adapt and innovate when responding to different (health) challenges, policy-makers and regulators often remain somewhat unwilling to engage with (or are even hostile to) the – often informal – motorcycle taxi sector. Furthermore, because of the intermediate and often informal nature of the motorcycle taxi sector, policymakers, urban planners and transport regulators tend to overlook the sector's role and potential (as a force for good/ support, but equally as a factor in further spreading COVID-19) or are not sure how to engage with the sector and its representatives. Prior to the COVID-19 pandemic, many of the measures taken by African cities to curb or even completely ban motorcycle taxi riding ignored the essential services they deliver and seemed to be mainly a response to the rising number of traffic accidents involving or caused by motorcycle taxi riders. More cynical interpretations argue that those lobbying for such bans (or those who are in a positions of power to implement such bans) typically travel by 4x4 and consider motorcycle taxis to be no more than a nuisance to their daily commute. That said, the rapid spread of urban motorcycle taxis does pose a series of challenges. Bringing motorcycle taxi operators/ unions and key stakeholders in urban (health) planning and transport together will be essential for the future sustainable socio-economic and environmental development of Sub-Saharan African cities.

1.2 Project aims and objectives

The aim of this project is to improve understanding of the impact of the COVID-19 outbreak (including the measures and restrictions put in place to reduce its spread) on the urban motorcycle taxi sector in Sub-Saharan Africa (SSA), via case studies of three West African countries (Sierra Leone, Liberia and Ghana) and three East African countries (Uganda, Kenya and Tanzania). While knowledge (including false/ ineffective 'knowledge') about how to reduce the chance of COVID-19 infection, through behaviour changes and/or social and technical innovations, may be shared spontaneously among individuals or small groups of riders, there is limited opportunity to share best practices between motorcycle taxi operators in different cities or between different LICs (and lower MICs). Therefore, a key objective of this study is to share the findings and best practices, including any social and technological innovations developed/ adapted by motorcycle taxi operators to mitigate the impact of COVID-19, with urban motorcycle taxi operators and key stakeholders, including policymakers, to allow for evidence-based rapid interventions. This has been done through the organisation of workshops, the creation of a sharing platform freely accessible to all relevant beneficiaries and key stakeholders, and the production of (six country-specific and one generic) policy briefs, which together allow for intra-city, inter-city and international peer-to-peer learning and knowledge exchange.

1.3 Transport challenges being addressed during/ post-COVID-19

Motorcycle taxis play a pivotal role in the provision of urban transport. However, relations and trust between the concerned authorities and motorcycle taxi operators/ unions can be strained at times, potentially affecting the effectiveness of COVID-19 measures and restrictions. This study has established:

- If and how the COVID-19 pandemic has affected urban motorcycle taxi services in general;
- Whether motorcycle taxi operators or unions have been consulted in the COVID-19 measures taken, their level of compliance with these measures, and reasons for limited or non-compliance; and
- Social and technological measures and innovations motorcycle taxi operators have introduced to limit infection by or spread of COVID-19.

1.4 Alignment with the HVT Programme

The aims and objectives of this project align directly with the HVT's general research themes, priorities and programme objectives of: 'applied research within cities in low-income countries (…) to increase access to transport services (…) [with] governments and people in LICs in Africa [as the beneficiaries] (…) [by drawing] on relevant case studies.' More specifically, the project provides insight in most, if not all areas listed under 'Lot 3 – Covid and high volume/ national and urban transport systems' in the 'Call for Project Concept Notes: COVID-19 and Transport'. These were:

- What have been the effects/ impacts of COVID-19 on national and urban transport systems (including the informal transport sector) and what innovative solutions have been adopted to keep transport moving?
- What changes do we need to bring to transport planning and managing and operating urban transport as a result of shocks such as COVID-19? How can the transport sector ensure access to essential services such as food and healthcare and access to workplaces for key workers during periods of lockdown?
- How have urban transport operators managed operations during lockdowns and what practices need to be sustained through recovery and beyond?
- What technology and innovation based solutions have emerged for urban and high volume transport as a result of the pandemic? How can the best of these be scaled through recovery and beyond? This would also address walking, cycling, informal and shared services.
- How exposed have transport workforces been to COVID-19 and what solutions are available to reduce risk and exposure?
- What lessons have been learned and what good practices exist for freight transport and logistics in the continuity in supply chains, (at either international, national or urban scales) as a result of COVID-19?
- How should land transport (passenger and/or freight) across districts, cities, states and national boundaries be managed under COVID-19? What are the sharable lessons?
- How do we make social distancing work for urban, rural and/or national transport systems?

1.5 Alignment with FCDO priorities

This project aligns with FCDO's priorities, through its rapid documentation and subsequent dissemination of knowledge, experiences and best (practical and policy) practices – including social innovations and new (locally developed) technologies – among and between beneficiaries and key stakeholders in LICs, to facilitate 'immediate response and guide recovery'.

1.6 Low-income country (LIC) beneficiaries

The six SSA case-study countries are the prime beneficiaries of the research, as through the data collection exercise important contacts and links have been created which allow for the rapid dissemination of the key findings and observations. However, due to regional spread and the number of case study countries, there is a strong case to be made that the study's findings can be extrapolated and applied to other SSA countries in West Africa and East Africa (and perhaps to Southern Africa as well).

2. Approach and methodology

2.1 Summary of approach

This research is divided into three key activities or work-packages. The three work packages set out below allowed the researchers to collect important data and answer the various research questions, to create opportunities for the key stakeholders and beneficiaries to discuss and access the findings in user-friendly formats, and to learn from peers across different countries and regions. The approach has high utility and was innovative due to the multiple opportunities created for peer-to-peer and peer-to-stakeholder learning, and for knowledge exchange at an intra-city, inter-city, inter-national and virtual levels.

2.1.1 Work Package 1: Data collection

In each of the study's case countries, data were collected through key informant interviews and motorcycle taxi/ motor tricycle taxi operator surveys in two cities.

2.1.2 Work Package 2: Sharing of findings

Data findings, including responses and socio-technological innovations, were discussed in country-level Focus Group Discussions (FGDs) between the country researcher, key stakeholders, and representatives of the beneficiaries. Due to ongoing COVID-19 restrictions in the case-study countries, typically the number of participants in these FDGs had to be limited to comply with regulations.

2.1.3 Work Package 3: Feeding back findings from regional workshops

Findings from the country studies and FGDs were presented at a webinar on 16th April 2021. The webinar participants included the various country researchers and key stakeholders (from all six case-study countries) such as representatives of MCT unions; traffic police; representatives from ministries of health (and other relevant ministries); market board members; city council representatives; transport sector regulatory bodies; and urban planning departments. The key stakeholders were identified by the country researcher based on a country specific literature review at the start of the project. A website and online open-access sharing platform have been developed (www.africawheels.org) on which the study's findings are shown, including short videos (of one to two minutes in duration) of MCT operators explaining COVID-19 related challenges they have experienced and how they have overcome these.

2.2 Methodology

Data were collected through a mixture of semi-structured qualitative interviews and short surveys. The research objectives set out in the section above were operationalised in five open-ended qualitative questions that were put to the key informants/ key stakeholders. For each case study country approximately 15 key informants were interviewed. The questions asked are:

- What have been the impacts/ effects of COVID-19 on urban transport in general and the motorcycle taxi sector specifically?
- If transport-related restrictions or a lockdown were introduced, what were the specifics of these, to what extent have motorcycle taxi unions and/or riders consulted in this, and to what extent have MCT riders complied with these?
- Are there any social or technological innovations or adaptions MCT riders can take (or have taken) to reduce exposure and limit the spread of COVID-19?
- Have experiences with and responses to previous outbreaks/ pandemics been used when addressing the current COVID-19 outbreak (for Sierra Leone and Liberia, think Ebola, for other countries, think for instance of tuberculosis, feared to be spread by using shared helmets)?
- If motorcycle taxi transport, from all the modes of public transport (shared-car taxi, mini- and midi-bus, etc.) poses the lowest risk of COVID-19 transmission, do you think that motorcycle taxi transport should be promoted?

In addition, further survey questions were designed to provide more quantitative data on these five topics. While some of our survey questions were in a simple 'yes/no' format, some used a Likert scale while others gave multiple choices. MCT and MTT operators were surveyed in two cities in each of our six study countries, with around 60 surveys per country. Our full research instrument is included as an appendix to this report. While 60 to 80 surveys can hardly be considered as sufficient for a meaningful quantitative analysis on its own, it is believed by the researchers that because of the way in which surveys were conducted (as described in the above paragraph), together with the key stakeholder interviews, that the data provides insight on par with what would be expected from a rapid appraisal method, for instance. The qualitative and quantitative data, plus the literature reviews, allowed for some level of triangulation to assess the validity of claims and findings.

Since the MCT surveys are standardised across the 12 locations (two urban settings in six countries), this offered opportunities for interesting comparisons, while also offering an aggregated 'bank' of about 360 surveys. The short MCT operator videos provide further incentives for discussions.

2.3 Innovation

Findings and pathways identified in the research have been shared through city workshops, the establishment of our sharing platform, the webinar, and via forthcoming publications. The webinar and the sharing platform (which include the short videos/ messages of MCT operators from the various countries in which they talk about their challenges and/or how these have been overcome) are enabling (international) peer-to-peer learning to take place and will show the extent to which 'best practice' in one location/ country can be applied in/ copied by another location/ country.

3. COVID-19 and transport in the six case study countries

3.1 Introduction

Chapters three, four and five present the analysis of the data collected for this study. Chapter three provides a short overview of how COVID-19 affected the case study countries in general and more specifically how it impacted on the urban transport sector, highlighting its impact on urban motorcycle taxi services. Chapter four presents, analyses and discusses key observations and findings of the stakeholder/ informant interviews, of which approximately 15 were conducted in each of the six case study countries. Chapter five presents, analyses and discusses the aggregated survey data, collected from urban motorcycle taxi operators. As noted, approximately 60 MCT operator surveys were conducted in each of the case study countries, thus the aggregated data is based on more than 350 surveys.

3.2 How COVID-19 developed and affected the case study countries

A short overview of how COVID-19 affected the six case study countries' urban transport and motorcycle taxi sector is provided below. This will provide some context to the data discussed in chapters four and five. The developments discussed mainly concern the so-called 'first wave' of COVID-19, which took place during the early and middle parts of 2020, and its aftermath.

3.2.1 COVID-19 in Ghana

In Ghana, the first two COVID-19 cases were reported on 12th March 2020. By 15th March 2020, four more cases were reported, triggering the closure of all private and public educational institutions, as well as a ban on public, social and religious gatherings. On 27th March, the President of Ghana imposed a two-week partial lockdown on the Greater Accra and Greater Kumasi Metropolitan Areas, the hotspots of the virus. When the lockdown eventually took effect on 30th March 2020, the total cases in Ghana had risen to 152 with five deaths and two recoveries. The lockdown mandated all persons to stay at home unless one had to engage in banking transactions, purchase food, water and medicine, or use a public place of convenience. Health workers and a few other categories were however exempted.

The lockdown was lifted on 20th April 2020, despite the number of infections being over a thousand at the time. However, the mandatory wearing of face masks and the requirement for physical distancing came into force. By the end of June 2020, though all the 16 regions had recorded cases, relatively few deaths and high

recovery rates were reported. The international airport and all borders were re-opened on 1st of September 2020, with COVID-19 testing required for all travellers.

The impacts of the COVID-19 pandemic in Ghana were significant, with several small and medium enterprises collapsing. Many private firms laid off staff while business entities which were able to retain their staff were often forced to halve their salaries (1). Government workers have been spared as they continued to receive full salaries throughout the COVID-19 pandemic period. The government injected several billion Ghanaian Cedis into the economy to cushion it. Some notable government interventions included the provision of free food to poor households during the lockdown, the supply of free electricity for three months, the absorption of water bills for several months, the implementation of stimulus packages for small enterprises, and the provision of motivational allowances and tax-free salaries for front line health workers during the three months of COVID-19 restrictions.

3.2.2 COVID-19 in Sierra Leone

The first COVID-19 case was recorded in Sierra Leone towards the end of March 2020, in Freetown, the country's capital. In response, the Government established a secretariat to manage the control/ containment of the disease, led by the Minister of Defence and with the participation of members of the public and government who had served previously on the country's Ebola control team.

A national lockdown was declared by the President to counter the spread of the coronavirus, which included shutting schools and places of worship and restricting travel. This 3-day lockdown started on 5th April 2020 after two more cases were identified, including one in a community. On 9th April 2020, the government announced additional measures. For an initial period of 14 days all inter-district travel was restricted, a curfew from 9 pm to 6 am was in effect, shops were to sell essential items only, and people were to stay at home unless they had good reasons not to. Face masks were strongly encouraged, especially in public places. A new 3 day lockdown was announced starting on 3rd May. At the time there were 1,341 people in quarantine with 29 recoveries. From 1st June, the wearing of face masks became compulsory. On 2nd July, the government changed the international travel restrictions, banning all passenger flights until 15th July 2020.

Between late May and early June, the country experienced its highest number – 33 – of average daily COVID-19 cases – measured on a one-week rolling basis. This number then started to decline, and by mid-August the one-week rolling average dropped below ten COVID-19 cases, with several subsequent months having less than a handful of cases. However, right at the tail end of 2020, in the latter weeks of December, average case numbers started to increase again, triggering fears that this might be the start of a second wave. Over the whole year, Sierra Leone recorded a total of 79 COVID-19 deaths, which all happened during the first few months of the pandemic in the country. 3rd July 2020 was the last date on which the country recorded a COVID-19-related death.

3.2.3 COVID-19 in Liberia

Liberia reported its first confirmed COVID-19 case on 16th March 2020. By 20th March, a third case was confirmed. The country's first COVID-19 death was reported on 4th April 2020. By the end of April, 141 confirmed cases were reported, and 16 deaths were recorded by the National Public Health Institute of Liberia (NPHIL). Neighbouring Ivory Coast announced the closure of its borders with Liberia and Guinea on 24th March while Liberia did the same with the Ivory Coast and Guinea on 31st March. Liberia's border with Sierra Leone was closed on 1st April 2020.

The country's experience during the Ebola crisis (2014-2016), which caused 10,720 infections and claimed over 4,800 lives, likely helped with the initial responses, including the re-adoption of certain disease control measures (2). On 21st March 2020, the Minister of Health declared a National Health Emergency in accordance with the Public Health Laws of the Republic of Liberia. This included, among other restrictions put in place in different areas of the country: the removal of persons and/or the compulsory medical examination of persons suffering or suspected to be suffering from a communicable disease; compulsory hand washing and wearing of face masks in public places at all times by all persons; and the limiting of the number of people allowed in public transportation vehicles, including buses, taxis, motor tricycle taxis and motorcycle taxis. In the declaration, the Minister designated Montserrado and Margibi Counties (where the initial cases had been confirmed) as affected by the virus and imposed a 21-day lockdown in these counties (3).

The President of the Republic of Liberia, George M. Weah, declared on 8th April 2020 that a nationwide State of Emergency would take effect on 10th April for a period of three weeks. However, the National Legislature approved it for 60 days. Movement of people was restricted between counties and a 14-day stay-at-home order was imposed for residents of Montserrado, Margibi, Nimba and Grand Kru Counties. On 24th April 2020, the stay-at-home order was extended for an additional two weeks in all 15 counties. The stay-at-home order permitted only one person from each family to go out to secure basic goods and services and required essential businesses and offices to stop operating at no later than 3pm. The Armed Forces of Liberia were ordered to enforce the State of Emergency.

By the end of 2020, a total of 85 COVID-19 deaths had been recorded.

3.2.4 COVID-19 in Kenya

The first case of COVID-19 in Kenya was confirmed in Nairobi on 13th March 2020 (4). On the same day, the government initiated a trace and test programme to identify those who may have come into contact with the index case and advised citizens on hygiene measures to be taken to contain the spread of the virus. More cases followed in Nairobi and the coastal city of Mombasa.

On 15th March 2020, the government announced several directives to curb the spread of COVID-19. The measures included the restriction of travel from countries with cases of COVID-19 and closure of schools and higher learning institutions. Public servants were directed to work from home except those offering essential services. Private businesses were also encouraged to allow their employees to work from home whenever possible (5). The government further instituted a daily curfew from 7 pm to 5 am, effective from the 27th of March, with all movement by non-authorised persons prohibited, except for medical professionals, health workers, critical and essential services providers (6). As of 27th April 2020, there were 363 confirmed cases, 114 recoveries and 14 deaths, while the epidemic was spreading beyond the initial epicentre. Public service announcements emphasised policies such as social distancing by working from home, a ban on public gatherings, and fewer passengers allowed in public vehicles (7).

In July, the government began easing some of the restrictions earlier put in place to contain the spread of the virus. The measures lifted included the cessation of movement into and out of Nairobi Metropolitan Area, Mombasa County and Mandera County. However, the nationwide curfew from 9 pm to 4 am was extended (8). With the lifting of some of the containment measures, the number of new infections increased, with 14,270 new cases in July, raising the total number of confirmed cases to 20,636. The death toll more than doubled to 341 (9). By the end of October 2020, there were 55,877 confirmed cases and 1,013 fatalities (10).

The negative effects of the partial lockdowns on the economy were enormous, with an estimated 1.72 million jobs lost between the months of March to June 2020 (11). The lockdowns also had negative effects on the social and psychological wellbeing of Kenyans, with cases of domestic violence, suicides and teenage pregnancies reported to be on the increase (12–14).

3.2.5 COVID-19 in Tanzania

Tanzania announced its first case of COVID-19 through the Ministry of Health on 16th March 2020 (15). Subsequently, a number of measures were announced in short succession: on 17th March, the Prime Minister announced the closure of all schools and a ban of all public and social gatherings. In the subsequent days, the order for an indefinite closure was extended to colleges and higher learning institutions. On 23rd March, the government announced that all passengers travelling from countries which were reported to have been affected by COVID-19 would be quarantined for two weeks at their own cost. However, on 4th May, Tanzania stopped reporting new cases of COVID-19 following false test results issued by the National Health Laboratory after biological samples submitted from pawpaw, car oil and a goat allegedly had all tested positive for COVID-19 during its laboratory equipment standard check-up (16). Before stopping the release of daily test results, it had been confirmed that there were 509 cases of whom 183 had recovered, and 21 had died.

On 1st June 2020, the order to re-open universities was given, and on 29th June other educational institutions re-opened, but with strict health guidelines in place. In the same month, the ban on public gatherings, sports and community events was ceased.

Many economic activities continued unabated, unlike in neighbouring countries where lockdowns and travel restrictions took their economic toll. Speaking against lockdowns, the Tanzanian President said that the country's handling of COVID-19 was to ensure that the economy came first and above everything else (15).

Following the suspension of international flights into the country in April, the tourism sector collapsed. This led to the closure of hotels, lodges and restaurants, and about 80% of revenues of tour operators was lost (17). The loss of business forced many establishments to lay off part of their workforce and those retained had to accept salary and wage cuts (18). Some farmers in the agricultural sector could not sell their products because customers could not visit the farms. More generally, as data provided by Google on urban mobility in Dar es Salaam showed, 30% less people visited workplaces, transit stations and restaurants (18).

3.2.6 COVID-19 in Uganda

Uganda registered its first COVID-19 case on 21st March 2020 and its first death on 25th July. Since then, the pandemic has caused severe damage to the Ugandan economy, especially the informal sector which employs 2.5 million people, about a tenth of the country's population (19). On 18th March 2020, prior to Uganda registering its first case, the President announced the most stringent and comprehensive measures in the region (20). The first lockdown measures included the closure of schools and higher institutions of learning, and a moratorium on religious, social, political and cultural gatherings like burials, weddings, and rallies. The measures also affected car taxis and motorcycle taxi parks.

On 4th May, the President announced a total lockdown including both public transport and private transport. Save only food markets, all other markets e.g. livestock markets, were closed. Even for food markets, MCTs providing supporting services were only allowed to carry goods/ merchandise and could only operate between 7 am and 2 pm. Only essential services were allowed to operate.

The Ministry of Health formulated Standard Operating Procedures (SOPs) to guide and operationalise the President's directives. For example, in the transport sector, SOPs included mass testing of people at border points and cargo truck drivers, contact tracing and testing. Whereas the ban on other means of transport was partially lifted on 4th May, MCTs continued to be barred from carrying any passengers (21–22).

From March 2020, when the first case was identified, the number of daily confirmed cases of COVID-19 remained relatively low, with a small spike around May, followed by further fluctuations. Between February and September 2020, there were 3,037 cases, 32 deaths, 1,466 recoveries, 71 health worker infections and a fatality ratio (%) of 1.1. As of 27th February 2021, Uganda's total number of cases stood at 40,322, with 33 deaths and 14,616 recoveries.

3.3 Transport-related COVID-19 measures introduced by the six governments

3.3.1 Ghana

During the imposition of the partial lockdown in March 2020, the urban transport industry was not left out of the restrictions. These restrictions included banning intercity passenger transport to prevent transfer of the virus from one region to the other. Only cargo vehicles involved in the food chain and transportation of petroleum products were allowed to undertake intercity or inter-regional movements. Furthermore, commercial vehicles operating in the cities were compelled to reduce the number of passengers in strict compliance with physical distancing protocols as well as observing hygiene protocols. Specifically, motorcycles were banned from carrying passengers during the lockdown and beyond. The restrictions in the carrying capacity of all transport modes such as taxis, *trotros* (minibuses) and domestic aircrafts were lifted toward the end of July. This also implied that motorcycles could carry passengers henceforth. However, the wearing of face masks in the transport sector continued to be required. The borders, including the international airport, were reopened on 1st September 2020.

3.3.2 Sierra Leone

Since its creation in 1964, the Sierra Leone Road Transport Corporation (SLRTC) has been the dominant transport operator, although they are in competition with private sector service providers ranging from large intercity buses, urban minibuses (locally known as *poda poda*) and more recently motorcycles and tricycles (locally known as *okada* and *kekehs* respectively). Under the current legislation, the Sierra Leone Road Safety

Authority (SLRSA) is responsible for designating public transport routes as well as setting fare levels. In 2007, the Road Traffic Act was passed in parliament which gave the SLRSA the singular authority to register and license all vehicles including Okadas and Kekehs. Motor-tricycle and motorcycle taxis are therefore, based on the 2007 act, permitted to operate commercially on the streets of Freetown and in the rest of the country.

The Government – informed likely by the recent Ebola outbreak it experienced – swiftly introduced a set of stringent measures to curtail the spread of the COVID-19 virus. Some of these measures had a direct (and mainly negative) impact on the MCT and MTT operators. The measures included hand washing, the use of hand sanitisers and face masks, and taking fewer passengers on board. As a result of a number of meetings between the MCT unions, MTT unions and the National COVID-19 Emergency Response Centre (NARCOVERC) team, the MCT/ MTT unions passed on instructions to their members. Furthermore, the unions increased their presence on the street by bringing in more of their own marshals to self-regulate the sector. They also enforced the use of face masks and hand washing equipment in the various parking lots allocated to the MCT and MTT operators. Importantly, they ensured that no motorcycle operator carried more than one passenger at a time. For the motor tricycle operators, no more than two passengers at any one time were allowed.

3.3.3 Liberia

While the general public generally adhered to hand washing and the wearing of face masks, restrictions on the movement of people between counties, the 3pm curfew and the limit placed on passengers on public transportation met with a difficult start (23). Confusion was evident at county border check-points (manned by the army), at community check-points enforcing the stay-at-home order and in the marketplaces between state security forces and civilians. Such confusion stemmed from a lack of clarity about the time restriction (3pm) and the various restrictions on the movement of people. A common scenario was when people embarked on their journey before 3pm but could not reach their home before the start of the curfew. As a result, many community check-points in the cities and counties saw large numbers of people being stopped and prevented of continuing their journey, creating conditions for overcrowding, which in turn was against stated health protocols of physical distancing. This also had adverse effects on market-traders dealing in perishable goods whose travel/ arrival time to a destination depended on the road condition and the availability of public transport vehicles.

The restriction on the number of people on public transport were as follows: shared taxis were allowed only three passengers in the back seat and one in the front seat; *Keh-keh* (motor-tricycles) were allowed two passengers in the back seat and none in the front, which was a reduction of two; motorcycle taxis were allowed just the one passenger, which was a reduction from an uncontrolled number of passengers (up to four passengers at times) (24). Again, these restrictions were initially met with stiff resistance from motorcycle taxi operators resulting in a number of scuffles with the police.

Once compliance became more widespread, the transport restrictions translated into increased transport fares (50%-100% increase) for all forms of public transport. This then had a knock-on effect on the prices of essential goods and food items.

3.3.4 Kenya

Mobility in Kenyan cities is dominated by informal sector operators – mini-bus taxis (locally known as *matatus)*, motor tricycle taxis (locally known as *tuk tuks)*, and motorcycle taxis (locally known as *boda-boda)*. There is currently no state-operated road passenger public transport service in Kenya (25). *Tuk tuks* are more popular in Kisumu and Mombasa as compared to Nairobi (26). *Tuk tuks*, according to Kenya's traffic laws, have a capacity of three passengers. They operate as shared taxis in some routes in Kisumu and Mombasa or as hired taxis. Those operating as shared taxis often carry more than the licensed capacity.

In their efforts to contain the spread of COVID-19 on public transport, the Kenyan government directed all public service vehicles (i.e., *matatus* and buses) to reduce the number of passengers to about a half of the licensed seating capacity to allow for adequate physical distancing in their vehicles. The operators were also required to ensure that their passengers always wore face masks and to provide hand washing facilities or alcohol-based sanitisers for their clients at the points of boarding. The operators therefore increased fares to cover the extra operating costs. Motorcycle taxis were required to carry not more than one passenger, and to

sanitise their passenger helmets and motorcycles after carrying a passenger. However, these guidelines were often violated by the operators (27).

The curfews which cut into the operating hours, cessation of movement in some parts of the country, and additional sanitary expenses generally reduced profit for public service vehicle operators. However, for many *boda-boda* operators, the lockdowns and restrictions boosted their incomes. For the over two months Nairobi and Mombasa were on lockdown, motorcycle taxi operators did brisk business, ferrying passengers to evade police roadblocks to move into and out of the cities. This was made possible by motorcycle taxis' easy manoeuvrability and ability to use smaller paths, locally called panya routes (28). These 'illegal' travellers were widely blamed for the spread of COVID-19.

3.3.5 Tanzania

Tanzania, like other countries, took immediate steps to limit the spread of the COVID-19 pandemic. The government declared that all incoming passengers from COVID-19 affected countries had to be quarantined for two weeks at their own cost. In some places, especially at bus stations, shops, and public markets, individuals who failed to abide by the directives given by the government – especially hand-washing and using hand sanitiser – were castigated by their fellow citizens (29). In the urban transport sector, physical distancing measures were introduced, resulting in a reduction of carrying capacity. These included limiting the number of passengers through the "level seat rule", which was in fact already introduced many years ago but hardly implemented. However, this time around it was successfully implemented, given the seriousness of the threat to public health posed by COVID-19.

Physical distancing measures in the urban public transport sector, especially for buses, resulted in increased waiting times for passengers at the bus stations. This was true for the in-between bus stops, as only in rare cases would buses stop to take on new passengers, if passengers had come off. Particularly in Dar es Salaam, one could wait for hours without a bus ever stopping. Furthermore, some service providers stopped working altogether to avoid being infected with the virus.

Sanitary measures introduced applied equally to the motorcycle taxi sub-sector. However, the implementation of some of these measures proved to be more challenging for motorcycle taxis. For example, some authorities banned the use of helmets citing potential dangers of spreading COVID-19 infections. At the same time, traffic police officers demanded the use of helmets for safety reasons. The general decline in mobility in cities also affected motorcycle taxis, with their incomes dwindling because of fewer trips made. Although many of them complied with the measures, enforcement of measures varied greatly. On major roads in cities, police officers enforced the measures. However, in secondary and tertiary cities, and small towns, self-compliance and peer pressure were the main motives for implementing the measures.

3.3.6 Uganda

Kampala's roads are dominated by MCTs, which account for 42% of all trips made in the city, and 10% of passengers (30). According to Hartwig & Lakemann (2020), measures against the MCTs damaged the sector which has over time heavily relied on the transportation of passengers, especially in urban centres due to the mode's ability to manoeuvre through the maze of traffic and its relative cheapness (31). MCTs are widely used by the majority of the middle class and poor people in Uganda. With the emergence of the pandemic, MCTs were urged to register with online applications like Uber and SafeBoda. However, riders protested this measure because it was expensive. Instead, they proposed through their associations to register under the government or be allowed to make their own application (32). Furthermore, MCTs in Kampala were threatened by a plan by the Kampala Capital Authority (KCCA) to ban many MCT stages and bar MCTs from operating in the Central Business District.

Following a cabinet meeting, a number of Standard Operating Procedures (SOPs) were issued by the Ministry of Works and Transport and Ministry of Security for all the *Boda-boda* operators nationwide, focusing on the gazetting of stages and registration (33).

Measures on MCTs and businesses were stricter and longer in Uganda than in the rest of East Africa. Transport-related COVID-19 control measures halted most of the services offered by MCTs like ambulatory and courier services. Initially, MCTs were allowed to transport only merchandise from morning to 2 pm, but due to resulting heavy losses in income and service, there was a public outcry that prompted the government

to extend their operational hours to 5 pm. On 18th May 2020, the President eased the lockdown, however MCTs were still not allowed to carry passengers, from whom they earned the most. The curfew was also not lifted. Despite successes in COVID-19 containment that prompted a further easing of the lockdown on 22nd June, again MCTs were still not allowed to carry passengers. Transport-related measures were enforced more seriously and harshly in rural than urban areas, sometimes resulting in shootings, beatings, confiscation of motorbikes, and other forms of violence.

On 20th September 2020, the President issued more guidelines that further eased the lockdown. At last MCTs were allowed to carry people, but only one passenger at a time (as per the law prevailing before COVID-19). Still, they were to do so by following strict SOPs including hand washing, sanitising, wearing face masks and recording names of their clients.

3.4 Informal/ unofficial transport-related COVID-19 measures taken in six case study countries

3.4.1 Ghana

Passengers and operators in the urban transport sector generally complied with the COVID-19 protocols of wearing of face masks and carrying hand sanitisers along their journeys. Some MCT operators defied the order not to operate passenger services and could find themselves in serious trouble with the law enforcers. One unofficial measure adopted by MCT operators was the sanitising of the inside of crash helmets meant for passengers before transferring them from person to person. This was to reduce the spread of the COVID-19 virus through personal contact with the crash helmets.

3.4.2 Sierra Leone

One notable attempt by some of the MCT operators was to put up a barrier like a wind-screen – between themselves and the passenger. However, soon they were instructed by the traffic wardens, police and their union to remove these barriers for fear it might cause accidents on the road. The 'do-it-yourself' nature of some of these structures could have easily posed an accident hazard, but with more professional involvement this would have been an idea worth exploring further. Other operators of both the MCTs and MTTs found ways of attaching their hand sanitisers to their motorcycle handles or to the front panels of the motor-tricycle. This practice was accepted and considered safe by the authorities.

3.4.3 Liberia

In addition to motorcycle taxi operators ensuring a 'No Mask No Ride" policy (similar to the policy that was ensured by drivers of shared car-taxis), most motorcycle operators carried along with them hand sanitisers – sometimes locally made – that they provided to their passengers and ensured they washed their hands before getting onto the motorcycle or motor-tricycle taxi.

3.4.4 Kenya

Individual *boda-boda* operators carried hand sanitisers in their pockets for use by themselves and their clients. Initially most of the operators wore face masks, but with time passing some just carried these to avoid arrest by law enforcement agencies. Equally, some operators only sanitised (the holding spots on) their motorcycles if demanded by clients. *Boda-boda* operators have often been associated by the general public with societal vices like drug, arms and human trafficking, violent robberies, murder and other criminal acts (34). The few cases where efforts by the unions to enforce government directives ended up in violent confrontations – including a case in Kisumu leading to the deaths of two operators – only reinforced these prejudices (35). The local government responded by deregistering some of the *boda-boda* unions.

3.4.5 Tanzania

Politicians, religious leaders and entrepreneurs all came up with 'measures' to combat the disease. For example, the use of ginger and lemon juice were among the more popular home remedies that were widely adopted. Steam inhalation was another measure widely adopted (36). Politicians, including the President, also appealed to members of different religious denominations to pray as a way of fighting COVID-19 (37). Following the belief that with God nothing is impossible, the President declared three days of prayers for the entire country.

The measures taken by Tanzania, such as allowing congregational worship in churches and mosques and not imposing a lockdown, were rather unique compared to other Sub-Saharan African countries. While some were concerned about Tanzania's approach toward overcoming the COVID-19 pandemic, the World Bank Group did recognise the importance of having a response based on and adapted to local circumstances, rather than merely duplicating Western approaches (29). One observation is that every country should (at least to some extent) embed its strategies for combating COVID-19 within the country-specific historical, economic, social, and political context.

3.4.6 Uganda

In response to the severe damage wrought on the MCT sector by the COVID-19 restrictions, operators, private individuals and companies devised measures to ensure that MCTs stayed in business. According to Hartwig and Lakemann (2020), many business operators resorted to digitalisation of their operations with many motorcycle taxis being registered with online applications to undertake door to door deliveries. The Independent Magazine observed that some motorcycle taxi operators had overwhelmingly signed up to already established applications like SafeBoda so that they could access more formal business operations. In March, the United Nations Capital Development Fund partnered with SafeBoda to include e-commerce on its platform to help connect riders with market vendors and their clients.

Due to strict COVID-19 prevention measures, motorcycle taxi operators resorted to carrying passengers in the city outskirts where they could easily avoid the wrath of police and local defence operatives. After the lifting of the ban, many people were eager to travel to their villages. MCTs and other transporters took advantage of this and hiked fares, possibly to compensate for the losses incurred during the lockdown.

Finally, some motorcycle associations, SACCOs and private companies like SafeBoda, Zembo and Tugende partnered with Private Sector Foundation (PSF) to organize a city-wide campaign to promote public safety regarding COVID-19.

3.5 Size of the motorcycle/ tricycle taxi sector

3.5.1 Ghana

According to the literature, two motorcycle unions exist in the Accra Metropolis (38). These unions – the Ghana Private Motorbike Operators Union (GPMOU) and the Motor Riders Association of Ghana (MRAG) – lack official recognition and have hardly any influence over the daily activities of the motorcycle taxi riders. For this study, respondents did not mention these unions. Instead, a new union, known as the Motorcycle and Tricycle Riders Association (MoTRA) Ghana, was cited. As motorcycle taxis are non-existent in Kumasi, there are no unions in the city. Rather, Autorickshaws (motor tricycles for passengers) taxis are operational in Kumasi. During this study's field work, two unions, the Pragiya and Okada Drivers Union (PODU) and the Krofrom Pragiya Union were cited. The autorickshaw is locally known as '*Pragiya*'.

3.5.2 Sierra Leone

There are two major intermediate forms of transport unions recognised in the country: the Sierra Leone Commercial Motor Bike Riders Union (SLCMBRU) and the Sierra Leone Commercial Tricycle Association (SLTCA). These two unions are hierarchically structured, with a President, Public Relations Officers, Secretary Generals, etc., and well-established offices at national, regional, district and chiefdom levels. They have officers, called Marshals, who try to ensure that the members cooperate with traffic laws. There is no definitive number to give for the number of motorcycles taxis operating in the country, as many motorcycle taxis remain unregistered, and often unlicensed and uninsured. These tend to operate more often in the rural areas, where there is a lower chance of being stopped by the police.

For some time now, the SLRSA has stated that it is in the process of enforcing the registration of all motorcycles in the country. But with limited resources, so far this has proven challenging, as operators typically have to travel to one of the main urban areas for registration. The MCT union estimates that there are about 250,000 motorcycle taxis operating in the country, with around 200,000 officially registered operators. However, many of the motorcycles have two or even three operators, who take turns in riding. The MTT union estimates that there are currently around 70,000 *Kekehs*, with only slightly more riders, as taking turns in driving these is less common. Note that in the middle of 2017 the estimated number of *Kekehs* was

around 70, showing that this form of transport has grown exponentially (39). According to the Sierra Leone Integrated Resilient Urban Mobility Project, public transport use is divided across the various sectors as follows: Mini-bus (*Poda Poda*) 44%; motorcycle taxi/ motor-tricycle taxi, 26%; shared-car taxi, 26% and large bus, 4%.

3.5.3 Liberia

In Liberia (and neighbouring Sierra Leone) motorcycle taxis filled the gap left by the widespread war-induced (1989-2003) destruction or looting of more conventional modes of public transport. The motorcycle taxis first appeared in the capital city and the main regional towns before spreading to rural areas (40). The early entrants to the new motorcycle taxi profession were ex-combatants from all armed factions who sought to make a living in the larger towns. However, the pull of the motorcycle taxi profession broadened quickly after the immediate post-war period, drawing in new riders who were not ex-combatants, but who simply resorted to the profession due to a lack of other employment opportunities. In 2012, the number of young people working in Liberia as motorcycle taxi riders, or in an auxiliary capacity as mechanics, bike washers, fuel sellers, etc.) was estimated at 500,000 (41) although this seems to be rather high for a country with not even five million people. Over the last five years or so, the motor-tricycle has rapidly gained popularity. Its introduction followed the introduction of legislation that prohibited motorcycle taxis from operating in the city centre of Monrovia, but not motor-tricycles.

3.5.4 Kenya

The rapid rise of motorcycle taxis is clear from the following figures: in 2005 there were 4000 motorcycle taxis registered, but five years later Kenya's Economic Survey 2010 found that there were now over 90,000 *boda-bodas* in the country. According to figures released by the Motorcycle Assemblers Association of Kenya (MAAK) in 2018, there were about 600,000 commercial motorcycles operating on Kenyan roads (42). The following year the Kenya Economic Survey 2019 estimated the number of new motorcycles registered in 2018 at 195,253 units. There are about 800,000 motorcycles in Kenya, with about 200,000 used by courier companies, private companies, and private individuals; and over 600,000 used as *boda-bodas* (42). Motorcycle taxi unions are mostly registered by the Department of Social Services as Self-Help Groups (SHGs), Community Based Organisation (CBOs), or as Savings and Cooperative Organisations (SACCOs) by the Department of Cooperative Development. SHGs are smaller groups usually with membership of 12 to 30 persons. CBOs are larger confederations of several SHGs in a town or a section of a city.

The *boda-boda* industry has become so big in Kenya that it has drawn the attention of the most senior politician in the country. The President acknowledges that the sector is one of the biggest drivers of the country's economy, with operators generating up Sh980 million a day. With a rider's average daily earning of Sh700 (approximately seven US$), the sector's annual income is estimated at Sh357 billion. The industry supports 5.2 million Kenyans, directly or indirectly, accounting for 11% of the population (34).

3.5.5 Tanzania

The number of registered motorcycles in Dar es Salaam stood at 302,169 in 2016 (43). Most of these are used as motorcycle taxis and only a few are for private use. Both registered and unregistered motorcycle unions/ associations exist in every region, although most of these ''unions'' are registered as youth development groups and not as sector-specific associations. According to information from community development officers of the three districts of Kigamboni, Ilala and Ubungo in Dar es salaam, these so-called unions are registered under the same category as women, youth or entrepreneur groups. They therefore have access to the same benefits as, for instance, youth groups, including access to soft loans. In Tanzania, the law requires that 10% of all revenue generated by municipal and district councils must be allocated as soft loans (low interest/ long pay-back terms) for such groups. A study by Bishop & Amos (2015) shows that there are three registered MCT unions in Dar es Salaam city (44). Each association sets its own conditions for membership, charges membership fees and sets rules for members (44). The registration process starts at street level where the MCT union base is located and ends at the district level where registration is granted.

Issues facing registered associations include a lack of support from government at district and regional levels, as association leaders feel that their views are not heeded by the authorities. A common issue is lack of funds for administrative costs, purchasing equipment, and funding members' training. Other issues include fear of

theft and assault, and bad perceptions among the general public who link *boda-boda* drivers to criminal activities. At the national level, the association of motorcycle owners and drivers in Tanzania – *Chama Cha Madereva na Wamiliki Pikipiki Tanzania* (CHAMWAPITA) – was registered in June 2020. It has 1.2 million members, coming from all regions in the country. For Dar es salaam, the regional *Chama Cha Madereva na Wamiliki wa Pikipiki Dar es Salaam* (CMDP) association has a total of 60,000 members (according to information availed by the CHAMWAPITA General Secretary).

3.5.6 Uganda

Motorcycle taxis and minibus taxis are the major modes of transport used in Uganda, with the minibuses typically dominating the longer-distance routes linking towns, cities, districts, and other countries in the region (45). Estimations of the percentage of minibuses in Kampala have varied, ranging from 20% (46) to over 40% (47). The motorcycle taxi sector continues to grow, however due to the instability and politicisation of the sector, their exact number is not known.

In 2014, it was reported that the number of commercial motorcycles registered with the KCCA stood at 60,000 (48). It is believed that this has grown considerably in the years since. For example, according to Hatchile Consult (2020), over 236,452 motorcycles are registered to operate in Kampala and their registration is reported to be at 34% per year (49). Over 800,000 motorcycle trips are taken daily (50). It is estimated that in Uganda, over 1.5% of the working population are involved in the motorcycle taxi business (50).

4. Perspectives of key stakeholders on COVID-19 and the motorcycle taxi sector

4.1 Introduction

In this chapter, the data collected via the key stakeholder/ key informant interviews is presented, analysed and discussed. In each of the six case study countries, approximately 15 interviews were conducted (typically about ten with stakeholders in the capital and about five with stakeholders in a second city). A full list of key stakeholders interviewed is presented in Appendix A; these included urban transport planners, traffic police representatives, health workers, motorcycle taxi union representatives, and market associations representatives, amongst others. The chapter is organised according to the five semi-structured questions that were asked to the informants.

4.2 Impacts of COVID-19 on urban transport

4.2.1 Lowered demand and supply

The effects of COVID-19 on the urban transport sector and motorcycle/ tricycle taxi transport specifically were noted by most informants. Informants typically indicated that the causal relation of the impact of the lockdowns in particular, was a lowered demand for transport services due to fewer socio-economic activities (e.g. temporary closure of businesses and part-closure of markets) resulting in a lower demand for public transport services, rather than the other way around, with restrictions in public transport services having a detrimental effect on socio-economic activities. This is illustrated by the below comment of a representative of a market association in Kumasi, Ghana:

> *"The number of trips we used to make to central market as market women has reduced because we don't get as many sales as before so it is the same with the drivers since we are their immediate customers" – Aboabo Market Association spokesperson, Ghana.*

It is also underscored by a sector representative:

> *"Generally, the number of trips has reduced in the COVID-19 era. This is due to the fact that some of the masses like educational workers no longer go to work because of the shutdown of educational institutions and other public gatherings" – Motorcycle and motor-tricycle taxi union representative, Ghana.*

That is not to say that the transport restrictions introduced, particularly during lockdowns, did not have a direct detrimental effect on the livelihoods of transport providers. This MCT union representative in Kenya summed it up as follows:

> *"Many people could work from home, but we cannot. The* boda-boda *needs to carry someone to get money. So when others were working from home, we lost work" – MCT union representative, Kenya.*

Restrictions varied from place to place, country to country and often reflected the severity/ number of infections of the COVID-19 crisis. With the introduction of curfews (typically early evening and during the night-time) those who would normally do the night-shift on the motorcycle would find themselves out of jobs:

> *"It has rendered many riders jobless due to lockdown and more so for the curfew for those who were operating at night" – City Director of Public Health, Kenya.*

Operators complained about the lack of government support, with no financial compensation made available for those who lost out on income:

> *"Less riding and low incomes, this makes our family suffer, because the government don't care at all for the drivers like us" – Motor-tricycle taxi operators' spokesperson, Liberia.*

Moreover, the restrictions and regulations also varied from one transport mode to another. Mini-buses and car taxis typically had to reduce the number of passengers that could be taken at one time, but with demand dropping as well, it had a negative impact in the income generated by providers of conventional modes of transport, as exemplified by the statement of a car-taxi driver:

> *"Before COVID-19, we used to have high patronage of passengers. During the COVID-19 pandemic, the taxi sector has negatively been affected. Our trips have reduced considerably" – Car-taxi operator, Ghana.*

While motorcycle taxis are officially not allowed to operate in the city centre of Accra during normal times, operators found a way around this by claiming that they are a private rider, taking a "family member" with them:

> *"The Okada* [motorcycle taxi] *business flourished during COVID-19. The restriction not to carry passengers did not work. The argument that a family motorcycle can transport one of the couples made the enforcement of the restrictions on motorcycle difficult" – Police Services representative, Ghana.*

During the three week lockdown, according to the following statement, the impact on the motorcycle taxi operators had been minimal:

> *"Apart from the lockdown during which the MCTs were prevented from operating, COVID-19 has not had any impact on MCT operations. For Accra, most of the motorcycles are into deliveries" – National Road Safety Authority, Ghana.*

While the supposed minimal impact is challenged by sector representatives and operators themselves, this statement brings up an interesting aspect: the increase in demand for courier services, with motorcycle taxis particularly suited to fulfil this demand. In a way, a positive consequence of the economic hardship wrought by the restrictions on the sector was realisation of the value of diversifying livelihoods by MCT drivers. Operators belonging to SMART Boda-Boda Cooperative (SBBC) in Uganda began to sell eggs, as explained by their chairperson:

> *"We decided to start a new business of dealing in eggs. We had about UGX eight million that we decided to invest in eggs. Remember eggs did not have a lot of market then because hotels, bakeries, and external markets were closed. We mobilised 40 of our members and sold them an idea of selling eggs. We identified a supply point, looked for boxes and boys parked about 40 trays on the bike and started selling them" – Motorcycle taxi union representative, Uganda.*

4.2.2 Increasing fares

Transport providers sometimes increased their fares to compensate for the seats that had to be left empty due to physical distancing, and to further recoup some of the lost income, fares were not always lowered to pre-intervention levels after restrictions were eased, as illustrated by the following comment:

> *"When the restrictions were introduced, they* [car taxi drivers] *increased fares to cater for the seats that were left vacant to make way for social distancing, [but] after the ease of the restrictions they still maintained the same fares" – Mensah Market representative, Ghana.*

This particular response by transport providers was corroborated by a Health Services representative:

> *"When the passenger intake was reduced, the fares were adjusted higher up to make up for the losses. But after bringing back the numbers, they [mini-bus drivers] have refused to reduce the price" – Health services representative, Ghana.*

Furthermore, as was observed in Tanzania for example, public bus drivers changed their normal routine of stopping mid-route to drop off or pick up passengers:

> *"For passengers it was a difficult time to travel around since it was difficult to get a bus especially from the middle of the route. Buses were moving from the beginning to the end of journey without stopping in-between to pick up passengers" – MCT user representative, Tanzania.*

According to an informant in Kenya, motorcycle taxi operators sometimes did good business during the lock-down, if they were willing to risk arrest:

> *"Some boda-boda operators made more money, assisting people to avoid police roadblocks" – Market traders association representative, Kenya.*

With no official lockdown or ban introduced, in Tanzania the MCT sector seems to have benefitted from the COVID-19 epidemic, at the cost of other forms of public transport. According to a representative of the medical office in the Health Ministry:

> *"Many people were scared of using public transport. They opted for taxi cabs and other personalised transport modes including motorcycles. Incomes of service providers was also reduced because of reduced numbers of passengers (only level seats). Some service providers stopped working, due to fear of drivers not paying vehicle rent on time, complaining that there are very few passengers" – Health Ministry representative, Tanzania.*

This was corroborated by a government town planner in Morogoro:

> *"Most people were avoiding public buses because of higher risk of infections. MCTs made a lot of trips, they get many passengers who resorted to MCTs since it was the only alternative that was deemed safe" – Government town planning representative, Tanzania.*

Where possible, people who under normal conditions may have taken public transport, now decided to walk the distance:

> *"Urban transport was affected because many people were not commuting and those who must commute prefer to walk to reduce the risk of infection. For distances of three to five kilometres, many people walked. Fear among passengers was also high, when someone sniffs, some passengers get off the bus" – Medical officer, Tanzania.*

A Ghana Road Safety Authority representative noted that just prior to the lock-down movements increased:

> *"Before the lockdown, there was a sharp increase in traffic activities and then there was a decline, especially in car/ bus services, which also gave rise to private motorcycles" – National Road Safety Authority, Ghana.*

In Ghana, with both the police and the army patrolling the streets during lockdown and putting up checkpoints, there was a high likelihood that non-essential vehicle trips were fined and/or prevented from further travel:

> *"In the lockdown period, there was strict compliance as the military and police enforced those restrictions. After the lifting of the lockdown, some law enforcers sometimes entered into public transport to inspect the wearing of masks by all passengers before the vehicle moved. Those who did not have them were dropped [off]" – Department of Transport, Ghana.*

According to the following Police Service representative, this triggered the public in different mobility choices:

> *"During the three-week partial lockdown in the Greater Accra Metropolitan Area, the restrictions on urban transport put some stress on drivers and passengers. Within this period, the fear of vehicles being stopped or turned back pushed people to travel on foot" – Police Service representative, Ghana.*

4.2.3 Mobility on demand

Concerns of people over contracting COVID-19 resulted in many opting for on-demand private transport (if they could afford it). The Mobility on Demand services saw their popularity increase:

> *"The taxis and ride hailing services such as the Ubers, the Bolts and the Yangos, etc., also benefited through advance booking or dropping services which are a positive impact" – Police Services representative IIII, Ghana.*

This observation is further corroborated by a conventional car taxi driver:

> *"The ride hailing services – Bolt and Uber – to some extent have taken over our customers as they* [*passengers*] *feel safe using them compared to us. The Okada have also collapsed our business in the COVID-19 era. I do not take Okada seriously compared to the Bolt and Uber which offer customers lower prices while transporting them from their homes. The Okada only flourished under heavy traffic congestion and in the slum areas" – Car taxi union representative, Ghana.*

The above comments illustrate the flexibility of the transport services sector, further increased by the recent arrival of the Mobility on Demand services. The same car taxi union representative draws attention to another 'unfair' competitive disadvantage the conventional public transport providers have: because they are unionised, regulated and controlled, they have to adhere to the regulations put in place by the government and union, while this is not true for the motorcycle taxis, or so it is perceived:

> *"The taxi union have instituted mechanisms in place to make sure all passengers have worn their face masks before leaving the transport terminals whereas the MCTs have no such mechanisms in place and this seems to flourish their business as some people do not like the idea of wearing their face masks regularly" – Car taxi union representative, Ghana.*

An additional reason for limited use of transport was that with strict measures introduced, an urban exodus was noticeable in a number of countries. With urban economic activities grinding to a halt or at least being significantly reduced, many of those who saw their incomes drop or completely disappear returned to their villages:

> *"The MCT-riding business was affected, people locked themselves in their homes and very few moved out, others left the city to go to their home villages to avoid the risky environment in the city" – MCT union representative, Tanzania.*

This was also observed in Uganda:

> *"Even those who ride, can no longer meet the demands of the family. So, a number of them had to go to the villages because cost of living was high. You have to go to the village where there is food and you don't have to spend money" – Kampala Capital City Authority representative, Uganda.*

This urban-rural flight subsequently led to loss of revenue by MCT cooperatives due to non-repayment of loans:

> *"We were also cheated in payments because some riders who went to [their] villages never returned" – Motorcycle taxi union representative, Uganda.*

4.3 Impact of transport-related measures and consultations of the sector

4.3.1 COVID-19 measures

Regarding the transport sector, most countries responded to the COVID-19 epidemic through a series of measures aimed at reducing the chance of virus transmission. Key measures included: restricting the number of services on offer, by cancelling certain routes or imposing curfews for instance; promoting physical distancing, by limiting for instance the number of passengers on a particular type of transport; and introducing hygiene measures to limit the virus' spread, for instance by making the wearing of face-masks or

using alcohol-based hand sanitisers compulsory. In Ghana, operators were also asked to police/ limit the level of conversations going on among passengers:

> *"Pragiya* [*motor-tricycle taxis*] *were taking two passengers instead of their usual three in adherence to the social distancing protocols despite the fact that they are banned from operating commercially. All other COVID-19 safety protocols were imposed on the motor-tricycle taxi sector including the wearing of face masks, [and] using alcohol-based hand sanitisers regularly" – Motor Traffic and Transport Department official, Ghana.*

According to this City Director of Planning, carrying of hand-sanitisers was made compulsory in Kenya for motorcycle taxi operators:

> *"They [the motorcycle taxi operators] were required to sanitise and also carry hand-sanitizers for use by their passengers" – City Director of Planning, Kenya.*

A key exception was Tanzania, which had limited measures in place and for a much shorter duration than neighbouring countries or countries in the region. According to a Transport Engineer based in Dar es Salaam:

> *"There were no lockdowns or transport restrictions on MCT operations. The general safety measures for the public such as the use of face masks, washing hands and social distancing were to be followed by everybody including MCT riders and many of them complied" – Transport Engineer, Tanzania.*

However, this was somewhat nuanced by a traffic police officer, who remarked that traffic was reduced significantly, despite there not being an official lockdown:

> *"Roads were empty, you can hardly see cars on roads. There were no people riding on bikes or taxis as people rarely left their homes. Even motorcycles lost income since passengers were few" – Traffic Police representative, Tanzania.*

In Liberia, the rules were more strictly implemented in the city centre as compared to the suburbs:

> *"The lockdowns were mostly restricted to central Monrovia but not in the outskirt areas. There were a few motor-taxis still riding but with limited passengers" – Motorcycle taxi union representative, Liberia.*

Something similar – a variation in the degree of implementation of and adherence to the restrictions was also noted in Uganda. The majority of MCT drivers in Mbarara seem to have complied longer than those of Kampala. Despite lacking a city-wide union or association, MCT drivers in Mbarara are more organized at division and stage levels than those of Kampala where the sector is larger and more fragmented. Hence, there was easier communication flow and self-policing through these structures. Commenting on compliance among MCT drivers, a Mbarara City Commercial Officer observed:

> *"We make sure on a daily basis that everyone who comes to the stage must have a mask and sanitiser. If they don't have them, they must not work. They will lock his motorcycle for the whole day at a particular stage. You can move around and check. Even outside here is a good example" – City Commercial Officer, Mbarara.*

4.3.2 Consultation of the sector

Few, if any, informants stated that motorcycle taxi union representatives or the operators themselves were consulted prior to the introduction of sometimes rather draconian measures. Generally, key informants argued that this was not and could not have been done because of the rapid spread of the virus and the urgency required:

> *"To be sincere, even the recognised transport operators were not consulted, not to mention the motor tricycle taxi operators whose services are illegal. Generally, the COVID-19 restrictions were an emergency response and there was no time for various consultations which could have delayed the taking of certain actions" – Motor Traffic and Transport Department official, Ghana.*

This is corroborated by a Road Safety Authority representative:

> *"I do not think these transport sector stakeholders such as the unions and in particular the MCT unions were consulted due to the emergent nature of the COVID-19. Critical decisions had to be taken" – National Road Safety Authority, Ghana.*

In Kenya, the relevant authorities communicated with the MCT union representatives, who then passed it on to their members, which did not always go smoothly, as illustrated by the following quote:

> *"The county commissioner communicated to our leaders on the restrictions. And we were warned that if we violated them, particularly the requirement to carry only one passenger, the* boda-bodas *will be banned. Our leaders therefore started enforcing this, and this brought conflict that turned violent and some people even died" – MCT union representative, Kenya.*

More generally, informants in Kenya noted that the government communicated its measures clearly to the sector:

> *"The restrictions were clearly communicated by the government. There were a lot of publicity campaigns in the media and road shows. Communication was done in both national and local languages" – Market traders association representative, Kenya.*

Not consulting relevant sectors prior to the introduction of measures seems to be a common issue, not just in developing but also in developed countries:

> *"The* Pragiya/ Adedeta [motor tricycle taxi] *unions were never consulted before the president announced the restrictions in the transport sector. Overall adherence to the restrictions can be rated as 50%, as many of the* Pragiya *riders were not adhering to them" – Motorcycle and motor-tricycle taxi union representative, Ghana.*

While the 'emergency' nature rules out long consultation processes, some of the unforeseen effects and low-compliance issues could perhaps have been prevented if the government did indeed consult with the relevant sector representatives. However, limited compliance was often driven by more mundane factors, such as the need and demand of people to use transport services:

> *"The stranded passengers needed to move [around], so although the transport operators understood the restrictions, this pressure from the passengers led to low compliance at some points in terms of the social distancing in the vehicles. Compliance was at its best where there was security presence. Compliance in wearing of face masks was somehow good but that of social distance was poor" – Regional Health Official, Ghana.*

In Tanzania, where measures were much more limited, there seems to be greater compliance and the government actively reached out to the motorcycle taxi sector via seminars:

> *"There was no lock down in Tanzania, all means of transport were required to abide by the general recommended measures such as physical distancing, use of face mask and washing hand or sanitising. Seminars on such measures were provided to MCT union leaders. Most of the MCT riders complied with measures especially hand washing. Some private companies also came in to support MCT riders [with] free hand sanitisers" – LTRA representative, Tanzania.*

But as this MCT union representative makes clear, providing seminars is not the same as actually consulting the sector:

> *"As riders we complied with the measures as communicated by the Ministry of Health, almost everybody wore a face mask in our station. We also had hand washing facilities for us and for passengers to use. We were not consulted [on the measures]" – MCT union representative, Tanzania.*

A motorcycle taxi union representative in Kampala provided an example of how his union is trying to be proactive in supporting its riders as much as possible*:*

> *"We ran an awareness campaign called 'TUGOBE CORONA' on how to avoid COVID-19. Although it has not gone well. We are currently looking for support on how get riders masks, sanitisers, [and] reflector jackets with COVID-19 prevention messages. We are engaging organisations and our partners like those who sell to us bikes, fuel companies like Total and Shell to support us in this*

campaign because a rider needs to have more than one mask" – Motorcycle taxi union representative, Uganda.

4.3.3 Compliance with the regulations

Compliance with rules was also noticeably higher at the start of the epidemic than later, again something that can be observed in countries all over the world:

> *"At the beginning of the disease, most MCT riders complied because fear was high, but later on just a few complied" – MCT user representative, Tanzania.*

Additionally, in Tanzania, the government changed position and suggested that the disease was beaten:

> *"At the beginning of the pandemic, most riders complied but later on many stopped. This is because people thought that the disease was gone because the government said so" – MCT user representative, Tanzania.*

When a mode of public transport is considered illegal (as motorcycle taxis are in Ghana) but still widely used, this creates a difficulty and dilemma: the government and its institutions cannot officially engage with the sector, even if it would be beneficial to do so. The following comment illustrates this dilemma:

> *"The restriction to reduce passengers was for all the players in the transport sector. The Pragiya* [motor-tricycle taxi] *was specifically to wear a mask and to reduce passengers from three to two. They were not consulted because they are illegally operating. They lacked terminals hence they could not provide Veronica buckets to ensure handwashing. However, the capacity reduction and masking were complied with" – National Road Safety Authority, Ghana.*

The adherence to the regulations varied from place to place and it is therefore no surprise to see other key informants highlighting for instance the limited compliance with mask-wearing:

> *"The reduction in the number of passengers was strictly adhered to as passengers often reminded drivers not to exceed certain numbers. However, nose mask compliance was low and some people only put on their masks when they approached the police" – Health Services representative, Ghana.*

Again, compliance with certain restrictions, particularly of those that banned operating, could be limited not because of a disregard for the rules but out of sheer necessity. Transport operators – particularly those that do not own their vehicles – can very much live from hand-to-mouth and cannot afford to be without an income for more than a few days:

> *"During the lockdown, motorcycle taxis were not allowed to carry any passengers in a bid to observe the social distancing protocols. Having complied with the restrictions for the first six days, some of our operators came out to operate due to starvation. These riders were often arrested by the police and forced to pay money ranging between GHS 300.00 and GHS 500.00 or faced court prosecution" – Motorcycle and motor-tricycle taxi union representative II, Ghana.*

Similarly, the difficult circumstances faced by MCT operators as a result of loss of business was described by a union representative in Uganda:

> *"Being at home with children but having nothing to eat, not anticipating anything as if you are a dog. He decides to risk with a chance that he would be caught and be fed in prison. Not simply because they wanted to be lawless" – Motorcycle taxi union representative, Uganda.*

4.4 Social or technological adaptations made by motorcycle taxi operators

4.4.1 Hand sanitisers and disinfectants

In addition to a number of regulatory measures to limit the spread of COVID–19 – particularly those reducing the number of passengers that can be transported at once – there have been some social and technical adaptions made by the intermediate modes of transport operators (and by some passengers). These are mainly limited to providing hand sanitisers attached to the motorcycle or motor-tricycle, or cleaning the inside of the helmets with sanitiser before handing it to the next passenger:

> *"The Okada riders usually hang mobile hand sanitisers on the bike or [keep them in their] pockets while operating"* – Police Service representative, Ghana.

This was corroborated by a health services representative:

> *"There was the disinfection of the passenger helmets with hand sanitisers before transferring among passengers* (Health services representative, Ghana).

Similarly, in Tanzania transport providers put in place hand washing facilities at the stands*:*

> *"They were using hand sanitisers and put hand washing facilities in their waiting stations" – Traffic Police representative, Tanzania.*

As can be seen from the following quote, a health service representative highlighted how disposable theatre head caps had been provided to their staff, to further reduce contact with a possibly infected area when wearing a shared motorcycle helmet:

> *"With our riders (GHS), we admonished them to cover their head with the disposable theatre head gears before wearing their assigned helmets. This could be an innovation from us" – Health Services representative, Ghana.*

In Tanzania, the MCT operators made some extra money by selling facemasks or headcovers to passengers:

> *"Some MCT riders sold face masks to passengers, which you have to buy before starting a journey. Some MCT riders provided disposable headcovers (to be worn underneath the helmet)" – Health Ministry, Tanzania.*

Others provided gloves:

> *"Some riders were providing gloves to passengers to protect them when holding touch points on the bike"* – Medical officer, Tanzania.

MCT operators in Uganda pioneered using glass shields to separate the driver from the passenger. The government rejected the glass innovation, stating that it would harbour the virus instead of protecting the passenger from the driver. The Regional Traffic Officer for Rwizi region (which covers Mbarara) further argued that the glass shield would be disastrous during accidents. Echoing the general stance of government, he added that given the technological make of motorbikes, the glass shield was a recipe for spread of COVID-19.

4.4.2 Attitudes to health measures

Expecting MCT operators to follow the advice and mitigating regulations, let alone them coming up with social or technological adaptions to further reduce the exposure and limit the spread of COVID-19, presumes that the operators believe that COVID-19 is a real disease and that public health interventions have some positive impact. This is not necessarily the case. Just as in more developed countries, in developing countries there are many who question the existence of COVID-19 and/or the effectiveness of the measures they are asked by government authorities to take to prevent the spread:

> *"Most of them [motor tricycle operators] do not wear the nose mask and they talk a lot; at times, I just pay them off and terminate the trip when even I [have not reached] my destination. A lot do not believe that the disease is real, but we have no doubt that this virus is even getting worse" – Aboabo Market Association spokesperson, Ghana.*

Another market association representative commented on this, highlighting a fatalistic mentality that is perhaps not uncommon among people involved in dangerous occupations, such as navigating busy traffic situations while riding an exposed motorcycle taxi or motor-tricycle taxi:

> *"Most of them trusted God and did nothing. Whenever they are cautioned, they retort that if one is destined to die by the disease or contract it, nothing can prevent that. So how will a person with this mentality ever think of innovating a new method to help reduce the level of transmission?" – Mensah Market representative, Ghana.*

The use of mobile payments, increasingly popular and widespread, rather than 'real' money, reduces contact between operator and passenger. It is likely that this type of payment received a further boost during the pandemic:

> *"They [motorcycle taxi operators] can use electronic means of payments (e-ticketing) such as those used in buses"* – LTRA representative, Tanzania.

MCT drivers in Kampala embraced e-commerce using mobile money to avoid direct financial transactions and expand their clientele. Many MCT drivers who had their clients' telephone numbers relied heavily on mobile money banking during the lockdown. During the lockdown, United Nations Capital Development Fund (UNCDF) partnered with SafeBoda in Kampala to promote the use of the SafeBoda App for online shopping by modifying it to include the capability of e-commerce. Besides this, MCT drivers with smart phones used online platforms like WhatsApp and Facebook to maintain business during the lockdown. These technological adaptions had great potential of reducing the spread of COVID-19.

However, some of the Standard Operating Procedures that the Ugandan government introduced did not fully work. For instance, the registering of passengers by MCT operators was difficult to implement because of refusal by passengers to divulge their telephone numbers to MCT operators for security reasons, as stated by the chairperson of a motorcycle taxi union:

> *"Registering passengers could not work. We tried to advise government, but it looks like his people fear him. We told them right away that recording would not work. People have fallen victims to conmen who called them on [the] phone and fleeced them of money" – Motorcycle Taxi Union Chairperson, Uganda.*

Registration was also bound to fail due to illiteracy of MCT drivers and many passengers, as further noted by a MCT union chairperson:

> *"This is a job for people who did not go to school. Most riders do not know how to write. If such a rider gets a customer who did not go to school at all, how will they work it out? They later saw that indeed it could not work but kept on telling us to try our best" – Motorcycle Taxi Union Chairperson, Uganda.*

Keeping physical distance between operators and passengers is impossible for motorcycle taxi transport, but that does not mean that the operators did not keep any physical distance at all:

> *"What we did was to maintain physical distancing among ourselves here at the base while waiting for passengers. We were being careful with the passengers to make sure we are not exposed to the disease"* – MCT union representative, Tanzania.

Keeping physical distance from each other while waiting for passengers, and postponing regular motorcycle taxi union meetings, were also practiced in Kenya*:*

> *"We also should avoid unnecessary gatherings. Currently we do not meet as we used to" – Motorcycle Taxi Union Representative, Kenya.*

A nice example of motorcycle taxi unions taking the lead in introducing measures comes from Uganda, where the union representative explains how he lobbied with commercial partners (TVS, a manufacturer of motorcycles) for PPE equipment:

> *"Sometimes I would also lobby for masks from companies like TVS that we deal with in the motorbike businesses. They gave me over 500 masks that I distributed among* boda-boda *riders on the ground as we trained them" – Motorcycle Taxi Cooperative Representative, Uganda.*

4.4.3 Job diversification

Finally, MCT operators innovated socially, for example, through (forced) livelihood diversification, including starting a new business or profession, and abandoning MCT driving completely. For many drivers, COVID-19 was a great teacher that had taught them to work, save, and avoid relying on one income stream. Some leaders estimated that 15% to 30% of drivers took new informal sector jobs. This insight was articulated succinctly by the Chairman of MCT union in Uganda:

"Some have been taught how to work. They have diversified their sources of income. Some have started small businesses like selling food stuffs and food delivery. Others have since picked a lesson and have started saving to buy their own plots of land and build" – MCT Union Chairman, Uganda.

4.5 Useful lessons from previous health crises

4.5.1 COVID-19 and Ebola

Sierra Leone and Liberia were only recently at the epicentre of the worst Ebola crisis in history, and it is therefore no surprise to see a number of similarities in responses and behaviour to the current COVID-19 crisis in these countries. Uganda has experienced much smaller Ebola outbreaks, or better put, Ebola cases, in its territories bordering the Democratic Republic of Congo. While perhaps the most similar disease, Ebola is not the only highly infectious disease from which lessons could have been learned and protocols put in place:

"Safety restrictions and hygiene protocols in cholera outbreaks are similar and can be translated to the COVID protocols, except that COVID is airborne and cholera is waterborne" – National Road Safety Authority representative, Ghana.

The following statements confirm that experiences in dealing with cholera have been useful in dealing with COVID-19, but the interviewee brings up an additional aspect, namely the challenge posed by COVID-19 with regard to social practices:

"COVID-19 did not shock us too much. In terms of cholera, the handwashing, eating warm food, not buying food from unhygienic places. However, the cultural shock that came with COVID-19 was [not giving] *the handshake. This was so engrained within our culture and very difficult for us all" – Police Services Representative, Ghana.*

During the West African 2015/16 Ebola crisis, SSA countries either (temporarily) closed their borders to travellers from the affected countries or introduced stringent health monitoring measures. This may have informed similar measures during the initial COVID-19 wave:

"During the Ebola, our government closed our border, preventing people from entering the country. So this might have informed our government to close our borders to prevent the spread of the COVID-19" – Motor Traffic and Transport Department Official, Ghana.

Based on earlier experiences with the Ebola virus epidemic, the President of Sierra Leone acted swiftly following the first case of COVID-19 in the country. He immediately put mechanisms in place to tackle the pandemic – starting with the creation of an Emergency Operations Centre (EOC) and putting together a team of experts (both local and international) of well experienced virologists and microbiologists. Within the outreach teams of the Ministry of Health and Sanitation, there were nurses who had already undergone training in handling viral diseases, as well as burial teams and other auxiliary staff (e.g. ambulance staff) who had also already been trained during the Ebola crisis and who were therefore able to hit the ground running. According to the Chief Medical Officer (CMO):

"These officials and specialists came in with a wealth of experience gained during the Ebola crisis and so the team took-off from an experiential point of view and with requisite confidence to bring the pandemic under control or at least stabilise the situation so that it does not spread and kill people indiscriminately" – Chief Medical Officer.

4.5.2 Taking COVID-19 seriously

While there are clearly sections within society who expressed doubt about the existence of COVID-19 (e.g. motor tricycle operators, according to the above quote by the market association spokesperson) other groups within society have responded with compliance with the regulations and seem to have little doubt about its existence and the potential severity of it:

"For the case of cholera in Ghana, people usually don't pay heed to sensitisation to prevent contamination, but in the case of this disease, people have handled it with much consciousness than I have ever seen with any other disease in Ghana" – Aboabo Market Association spokesperson, Ghana.

A final comment alludes to the fact that some diseases more common in Africa can sometimes be perceived as 'fake' or a 'hoax' by conspiracy theorists. However, according to this interviewee, the fact that the devastating impact of COVID-19 first happened in the far East and Western world, offered African countries an opportunity to learn from those countries' responses and refuted the argument that it was a 'fake' disease, made up to undermine Africans and African nations:

> *"We saw on television and social media how the sickness had killed several of the whites, so before it got here, we were somewhat prepared because a lot of education had gone on" – Mensah Market representative, Ghana.*

4.6 Motorcycle taxis as a low-risk means of transport?

4.6.1 Questioning MCTs as a safe transport mode

There are several factors that can make the likelihood of COVID-19 transmission lower for motorcycle taxi and motor-tricycle transport, as compared to more conventional modes of public transport. Both modes of intermediate transport carry fewer passengers per trip and both modes typically have considerable fresh-air flows around the operator and passenger(s). On the other hand, wearing of helmets for motorcycle taxi transport can be a potential source of virus transmission, particularly if it is integral rather than an open face helmet. An increasing number of regular motorcycle taxi passengers use their own helmets. So do the interviewees think that motorcycle taxis and tricycles pose less risk, and if so, should their use be promoted?

Quite a few of the respondents challenged the notion that the intermediate forms of transport pose lower risk, mainly due to limited compliance of the operator with measures put in place:

> *"If only they [motor tricycle operators] would observe the protocols, it can be promoted. (…) I don't believe it poses the lowest risk, but I also don't agree that government should ban their operations" – Aboabo Market Association Spokesperson, Ghana.*

A similar point is made by a health services representative, arguing that motorcycle taxis could be safer if they would not share passenger helmets:

> *"One helmet is being transferred among passengers and the passenger contact with the rider makes the Okada riskier for COVID-19 compared with conventional transport" – Health Services Representative, Ghana.*

Obviously, the very close contact between a passenger and the operator is further cause for concern, as argued by the following interviewee:

> *"I don't think MCT poses lower risk, the risk is the same for all transport means. It is even higher for motorcycles because there is no physical distance between a rider and a passenger. Also, the fact that all passengers touch the same place (for support) is even riskier. A private motorcycle is safe, MCT taxi I am not sure" – Transport Engineer, Tanzania.*

Other respondents made the case that more conventional modes of public transport could put measures in place and thus pose a lower risk of transmission than the intermediate modes of transport:

> *"No, COVID-19 or no COVID-19, we need to look at the safety of their operators. The large vehicle might even have better COVID-19 protocols in place than the tricycle. So far as there is personal contact, even if the numbers are low, there could be transmission" – National Road Safety Authority, Ghana.*

A similar argument is made by a Police Service representative, particularly highlighting the opportunity for physical distancing in a larger vehicle:

> *"Due to the closeness between the rider and passenger, there is a higher risk of infection on the motorbike. Larger vehicles like buses can observe better social distancing protocols than motorbikes. Hence, I do not agree to the assertion that MCTs pose lower risk and will not recommend them for use in the COVID-19 era transport" – Police Service Representative, Ghana.*

4.6.2 MCTs as the safest transport

It should perhaps not come as a surprise that motorcycle and motor-tricycle representatives take a different perspective on the relative safety of MCTs:

> *"The COVID-19 spreads faster in an enclosed area due to the exhaled air circulating among the people. But with the* Pragiya*, there is free circulation of air making the risk of COVID-19 lower. Hence, the service of* Pragiya *should be promoted in the COVID-19 era to reduce the risk of COVID-19 spread" – Motorcycle and Motor-tricycle Taxi Union Representative, Ghana.*

Another MCT sector representative wholeheartedly agrees:

> *"Yes, Okada should be promoted during the COVID-19 [epidemic]. Most of the MCT passengers do not touch the bike which makes the MCTs pose lower risk of COVID-19 transmission unlike the conventional transport services where passengers have to touch the doors and seats which make them prone to the [virus] spread" – Motorcycle and Motor-tricycle Taxi Union Representative, Ghana.*

Perhaps somewhat surprisingly, a comment in support of motorcycle taxi transport was given by this traffic police officer in Tanzania, acknowledging the importance of the sector for the daily livelihoods of its users and for employing large numbers of young people:

> *"I think [the motorcycle taxi sector] should be promoted because it has helped many considering that urban transport is cumbersome. With good training on MCT riding and on how to run their business, I think it will help many young people" – Traffic Police Representative, Tanzania.*

A key issue (for Ghana) is again the informal nature of motorcycle and motor tricycle transport. If permitted and formalised, it could be regulated:

> *"We may promote MCT transport if only we form associations/ groups, train and license them and allow them to operate. If they flout the rules, their licenses [would be] revoked. Since they are useful in beating traffic congestion. Until that is done, we should not allow them. Regarding COVID-19, if the occupants observe the COVID-19 protocols, the risk will be low. This boils down to training" – Health Services Representative, Ghana.*

A final comment was made by a Liberia Health Service representative, who highlighted the opportunity to promote cycling rather than motorcycle taxi riding. Few people in Liberia cycle but this health-crisis could have been used to introduce a number of measures to promote this form of transport:

> *Due to the Coronavirus, governments can stimulate cycling for essential trips instead of using the public transport. This has been practiced by some cities such as Bogota, Berlin, Budapest, Mexico City and Vancouver [where they] are turning roads into bike lanes (Health Services representative, Liberia).*

5. Findings of motorcycle taxi operator surveys

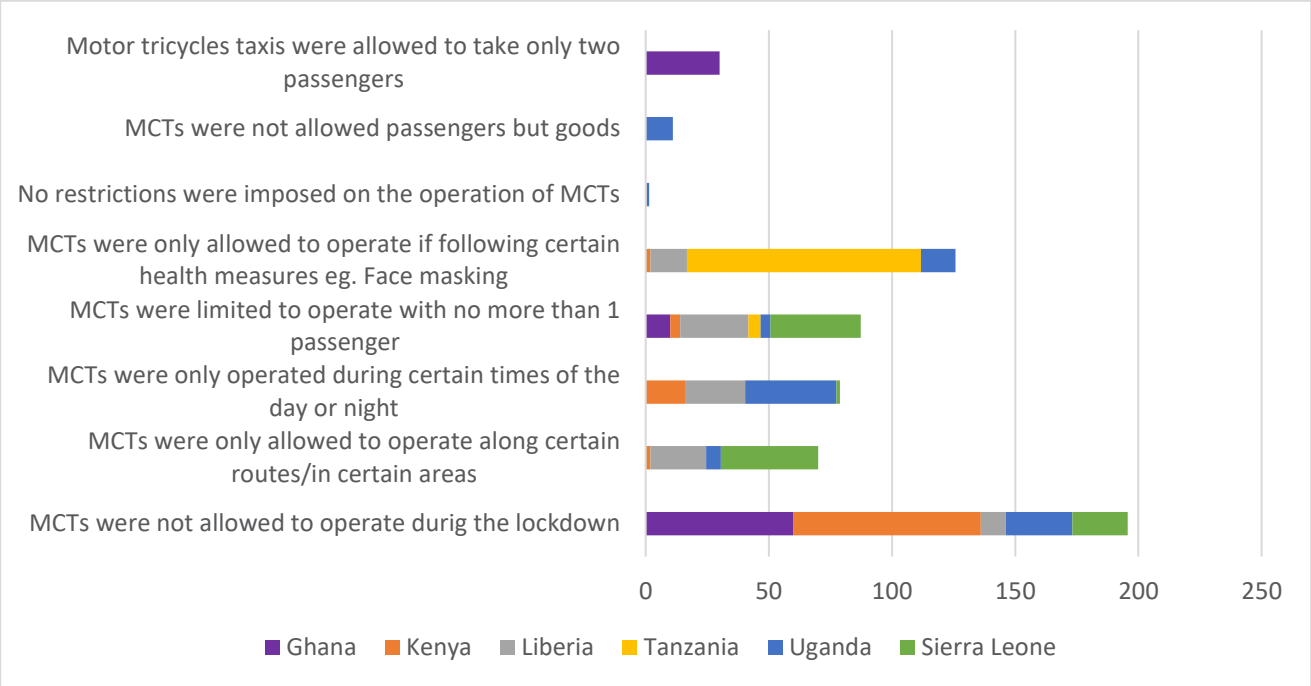
5.1 Findings

Below the findings of the motorcycle taxi/ motor tricycle surveys are presented. As noted, in each of the six case study countries, approximately 60 surveys were conducted, spread equally over two cities (typically the country's capital and a major secondary city). The aggregated data – that is 6 x 60 surveys – is presented in the tables below and discussed. In cases where the individual country's data is significantly different from the other countries for a particular survey question, this is highlighted. The researchers, when collecting the survey data, approached this exercise as more than a 'box-ticking' event, and on several occasions asked the respondents to explain their answer, to gain a better appreciation of why such an answer was given. This understanding proved to be useful for the interpretation of the data as well as for the workshops. **Table 1** provides an overview of the number and locations of motorcycle/ tricycle taxi surveys.

Table 1: Number and location of motorcycle/ tricycle taxi surveys

Countries	Number of surveys	Capital City	Secondary City
Ghana	80	Accra	Kumasi
Kenya	67	Nairobi	Kisumu
Liberia	60	Monrovia	Ganta
Tanzania	60	Dar es Salaam	Morogoro
Uganda	61	Kampala	Mbarara
Sierra Leone	60	Freetown	Bo

Figure 1: Restrictions introduced during COVID-19 lockdown



The studied countries all experienced lockdowns, but the duration of these lockdowns varied, and some countries experienced multiple lockdowns. What exactly was allowed and what was not also varied from country to country, but it is evident that in most countries/ cities the lockdown regulations prohibited motorcycle taxis from operating. However, it is clear from **Table 2** that there was no blanket prohibition on motorcycle taxi riding, as respondents from all countries indicated that they were sometimes allowed to operate but with certain restrictions in place (Liberia is a particularly clear example of this). The exception here seems to be Tanzania where MCT operators continued to provide their services but had to take preventative health measures to do so.

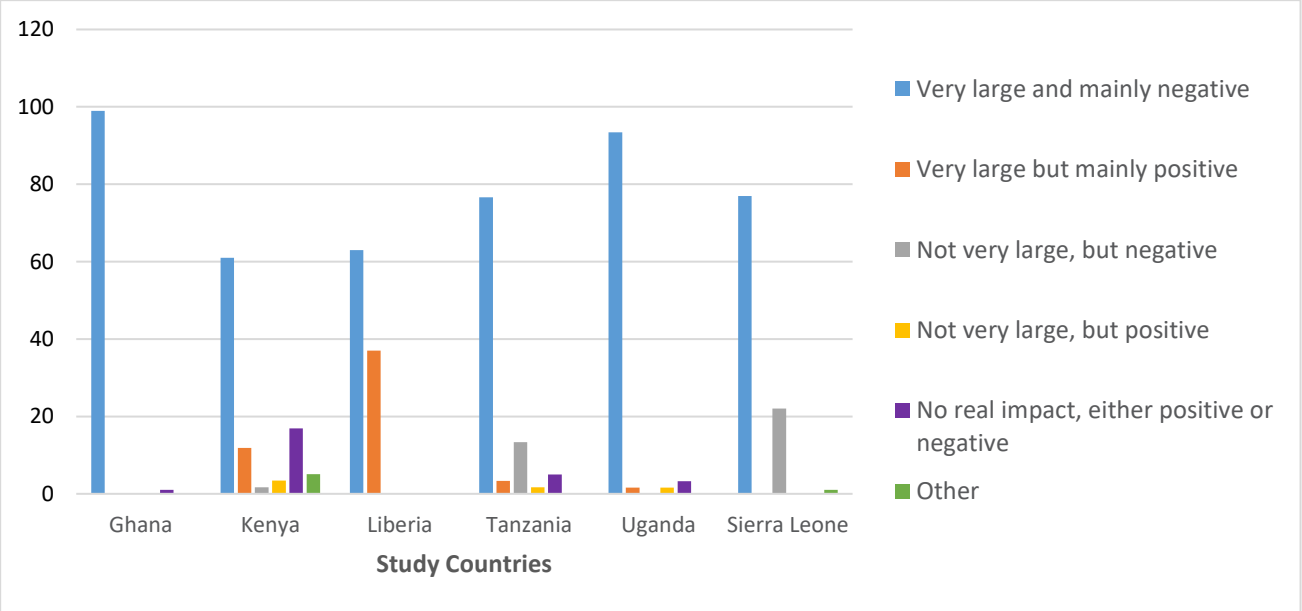
Table 2: Journeys made per week during COVID-19 era

Responses Sample Size (N)	Ghana 80	Kenya 67	Liberia 60	Tanzania 60	Uganda 61	Sierra Leone 60
Increased a lot	0	0	33	0	3	0
Increased a little	0	11	2	2	0	0
Remained more or less the same	0	2	5	7	2	0
Decreased a bit	18	3	17	13	3	42
Decreased a lot	66	71	42	78	69	57
No journeys were made at all	16	5	2	0	23	0

Responses	Ghana	Kenya	Liberia	Tanzania	Uganda	Sierra Leone
Other and/or explain your answer above	0	9	0	0	0	1

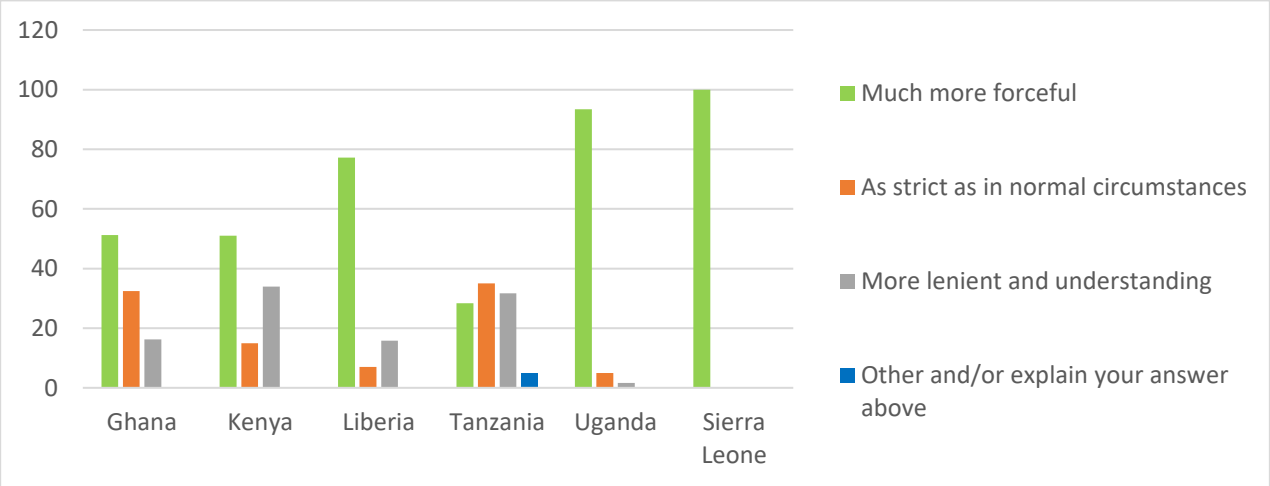
From **Table 2** it is clear that in most countries the number of journeys made by the MCT/ MTT decreased a little or quite a lot. Note that these include journeys made during the lockdowns and during the COVID-19 period more generally, which explains why the number of responses per country is higher than the number of MCT operators surveyed. The detailed country reports break this down in more detail, but overall, it seems that the number of journeys made by MCT/ MTT per week was reduced, likely due to reduced economic activity and/or people staying home whenever possible. The exception here is Liberia, where a significant number indicated that they had seen the number of journeys drop during certain times, but then saw the number of journeys increase significantly.

Figure 2: Impact of COVID-19 on the MCT/ MTT profession



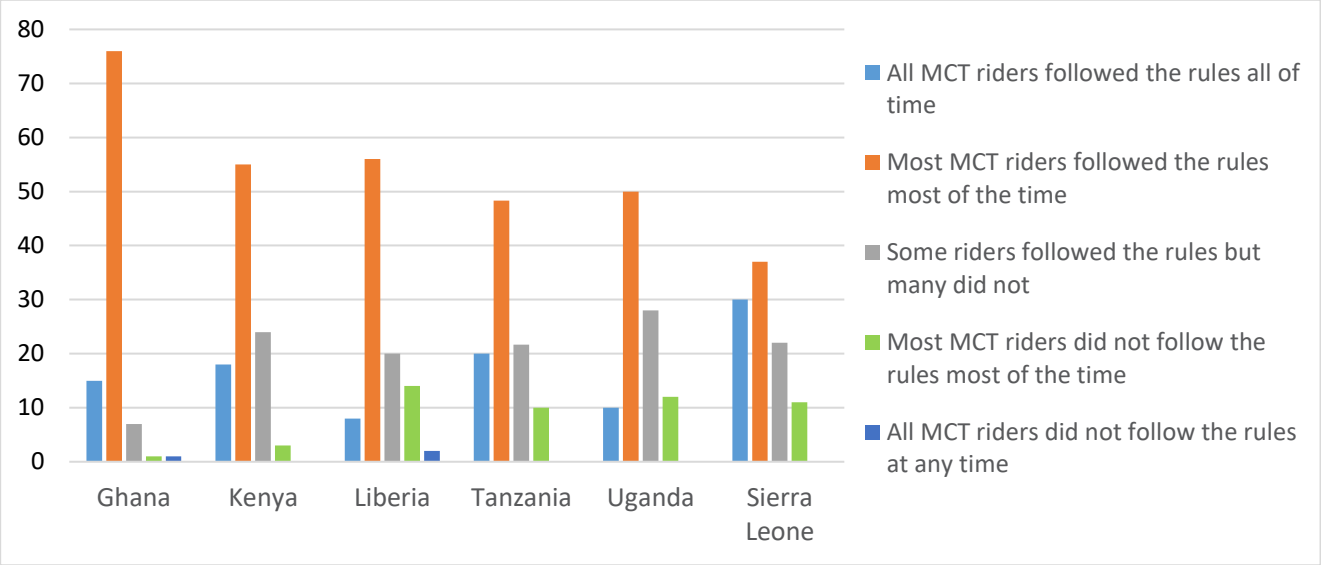
It comes as no surprise that with the restrictions in place and the number of journeys dropping – in addition to a reduction of passengers allowed to be carried – most operators indicated that the impact of COVID-19 on their jobs/ livelihoods was both large and negative. Again, the part exception – and in line with the observation made in **Figure 2** – is Liberia, where a significant number of the respondents indicated that the impact was large and mainly positive. This reaffirms the finding that Liberians likely made increased use of motorcycle and tricycle taxis during the 2020 COVID-19 year.

Figure 3: Enforcement now compared to normal times



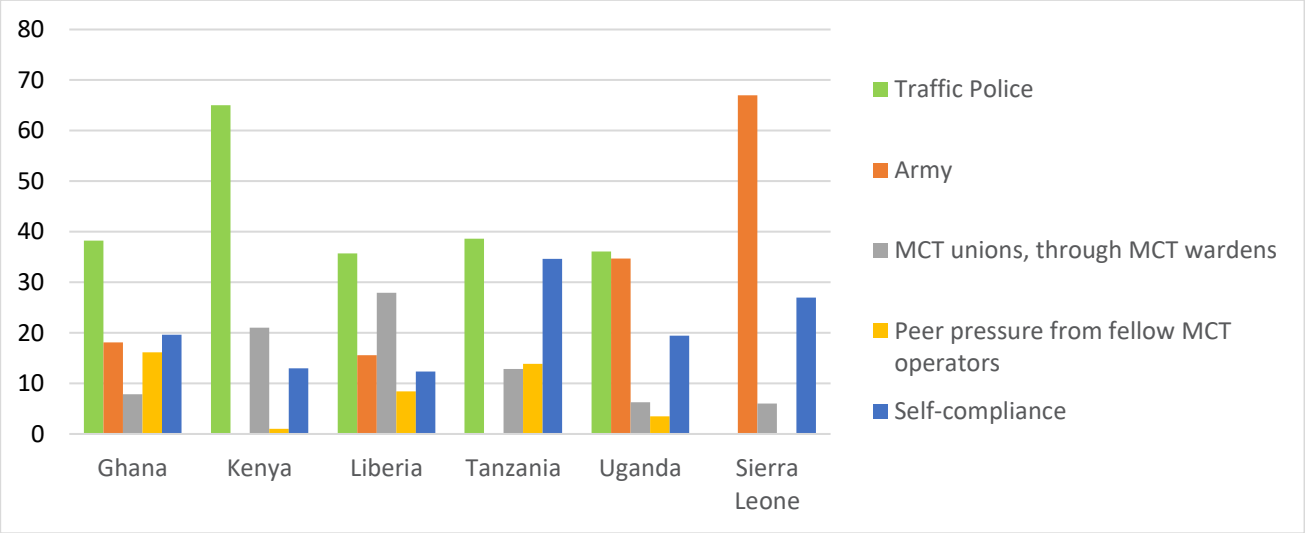
The significant impact of the COVID-19 restrictions and measures is also clear from Figure **3** above. Operators in most countries indicated that the enforcement of measures and restrictions were much stricter than in normal (non-COVID-19) times. Tanzania, with its limited measures, is the clear exception.

Figure 4: Adherence to COVID-19 restrictions



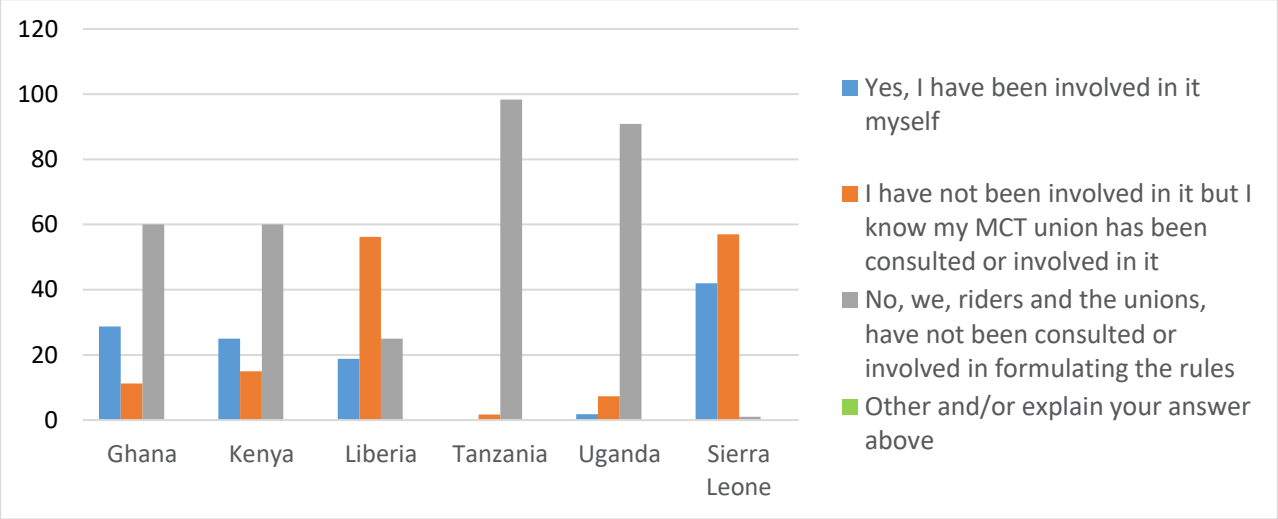
For Figure **4**, MCT/ MTT operators were asked to 'judge' the extent to which their peers obeyed the rules and restrictions. It is clear that in all countries operators indicated that their fellow operators followed the rules most or all the time. But in each country – with the possible exception of Ghana – there was a sizeable proportion of the operators not always following the rules, or even following the rules at all. The more qualitative analysis – discussed in the previous chapter – has indicated the various reasons for limited or non-adherence to the restrictions, and it was clear that these were mainly driven by necessity and a need to earn an income.

Figure 5: Who enforced the restrictions



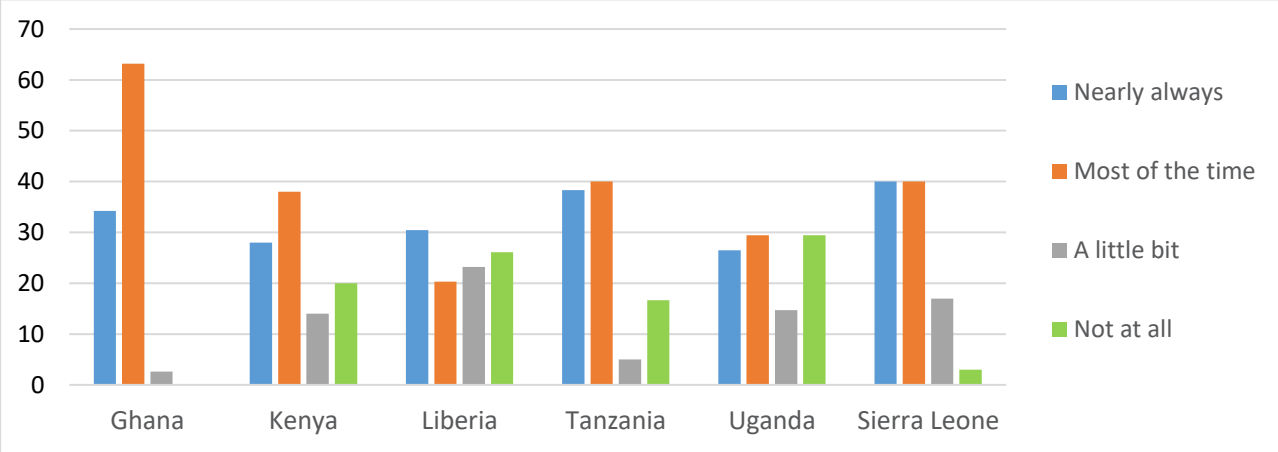
The COVID-19-induced restrictions – which were generally followed by most operators, or at least at first – were generally enforced by the traffic police, except in Sierra Leone, where the army was overwhelmingly tasked with the enforcement (see **Figure 5**). There is some level of self-compliance as well, and together with the enforcement by the motorcycle taxi unions themselves, this does indicate that there is reason to further explore opportunities for more collaboration between the government, its institutions and the operators and their representatives.

Figure 6: MCT/ MTT Union consultation



It is evident from **Figure 6** that in the East African countries and Ghana, the unions representing the intermediate forms of transport were not consulted in the measures/ restrictions. From the qualitative data it became evident that the main justification for this was the urgent need/ emergency situation, which required swift action. Interestingly, in both Sierra Leone and Liberia, the operators surveyed indicated that their unions (or they themselves) were consulted about the measures applicable to the sector. This shows that consultation during a health emergency is possible and does not necessarily need to take up a lot of valuable time.

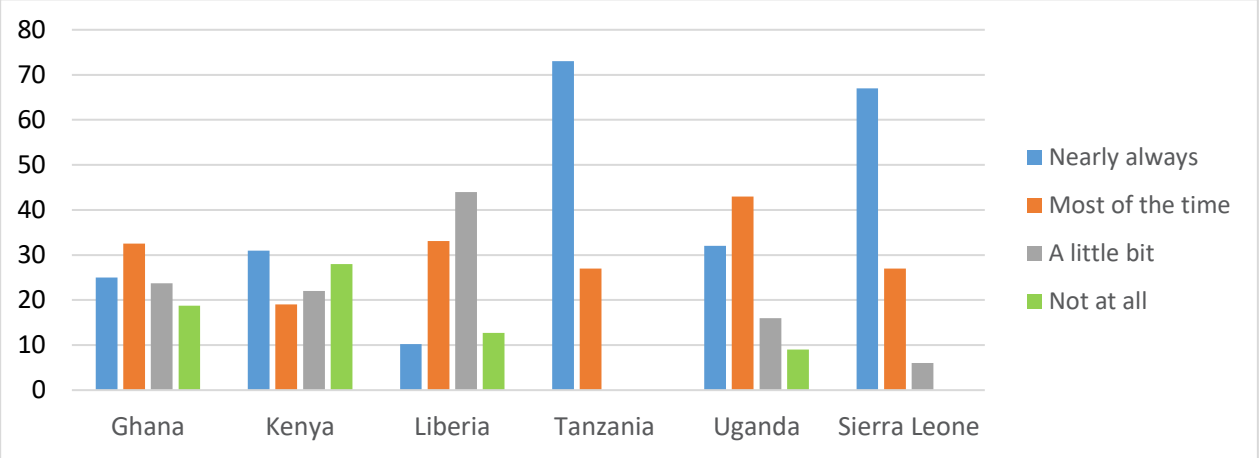
Figure 7: Trust in the MCT/ MTT Union



The above table provides a further rationale for the involvement of the motorcycle/ tricycle unions in the design and communication of the measures required to respond to the epidemic. In most countries, the unions are trusted 'most of the time' or 'nearly always'. That means that if one has the unions onboard, it will be easier to get the riders to comply with any measures. However, Uganda (and to a lesser extent Liberia) paints a slightly different picture, with the operators indicating lower trust in their unions (**Figure 7**). Hence, a country tailored approach will be necessary.

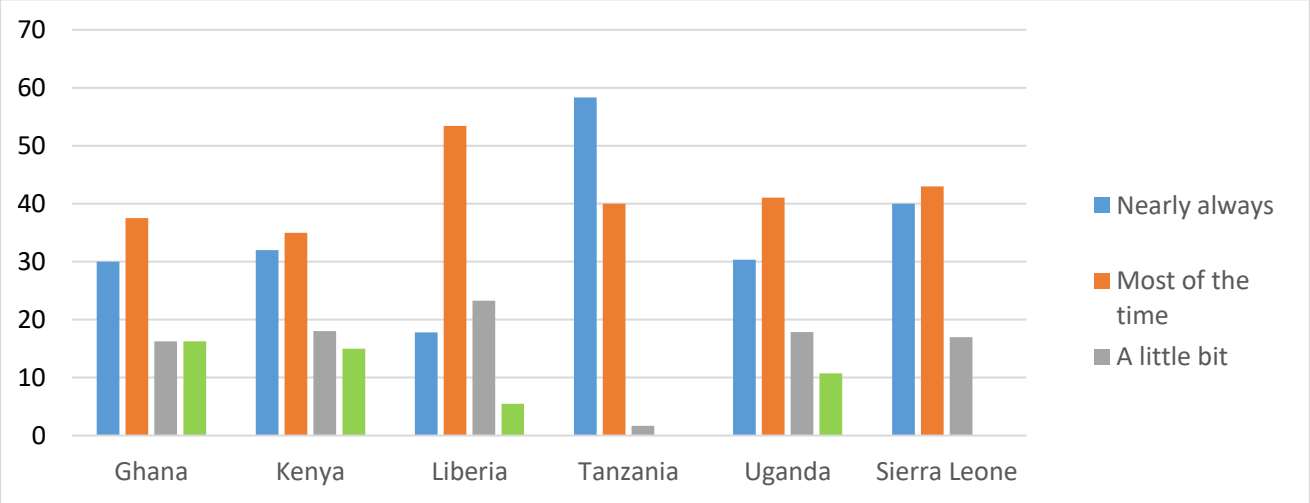
The next three (Figures 8, 9 and 10) show the level of trust the operators have in the various institutions formulating or executing COVID-19 measures and restrictions.

Figure 8: Trust in governments



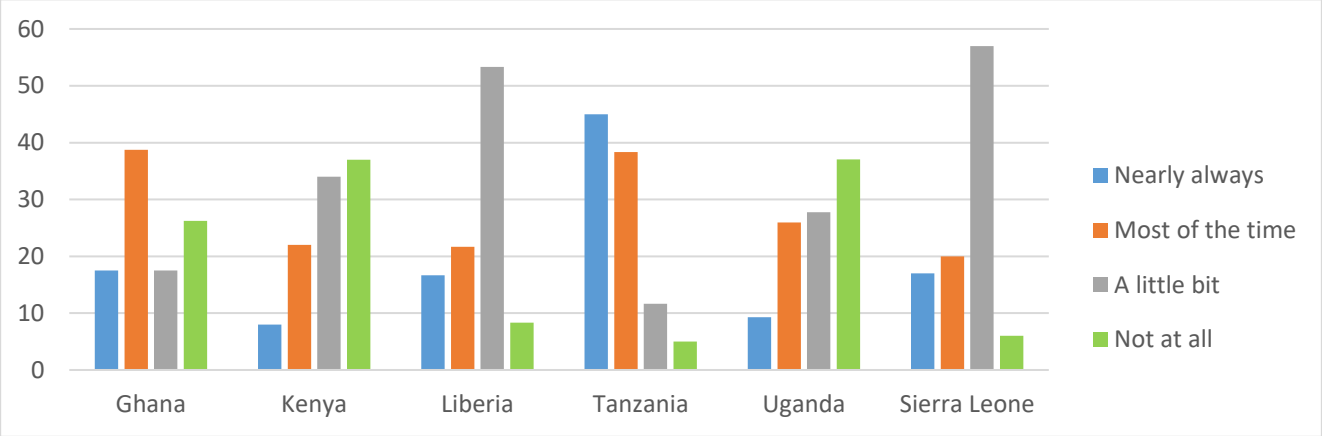
Obviously, the higher the level of trust in an institution, generally, the more likely one will follow its advice. The government is the institution that takes the decisions about the various measures and restrictions, including if a lockdown is imposed or if operators have to reduce the number of passengers that they can take at any one time, to comply with physical distancing regulations, for instance. Generally, the government is trusted by the operators, with Tanzanian operators indicating the highest level of trust and Kenyan and Liberian operators indicating the lowest levels of trust as observed in **Figure 8**. Note that the restrictions in Tanzania were the mildest of all six case study countries.

Figure 9: Trust in the Ministry of Health



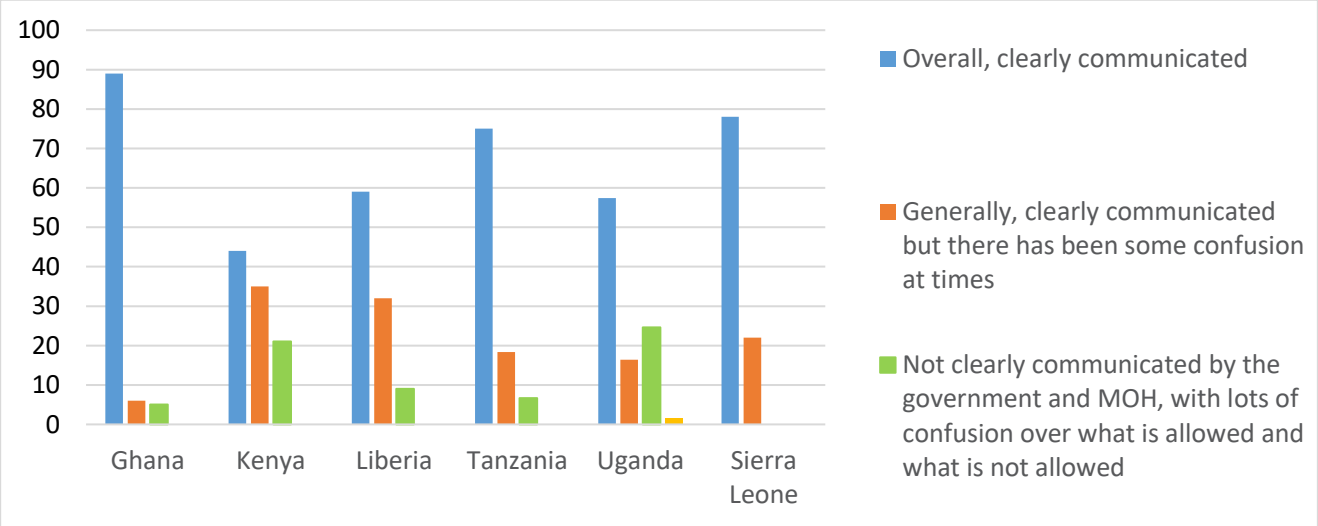
Levels of trust in the Ministry of Health among the operators in the six countries (**Figure 9**) was considerably higher than levels of trust within the government more generally. It seems that the MCT/ MTT operators considered the Ministry of Health representatives as trustworthy and as experts in the issue. This of course makes a case for the governments to make most of their COVID-19 communications go through the Ministry of Health to achieve higher levels of compliance.

Figure 10: Trust in the army/ police



In Figure 5, it was showed that the police (and in Sierra Leone, the army) enforced the transport-related regulations. If there is limited trust within these institutions, again compliance can be limited and the need for enforcement can be harsher. Generally, the police and army suffer from a lack of trust by the operators, with Kenya and Uganda standing out in particular (see **Figure 10**). Again it is clear that in Tanzania the police are generally trusted – likely due to the limited restrictions that were put in place.

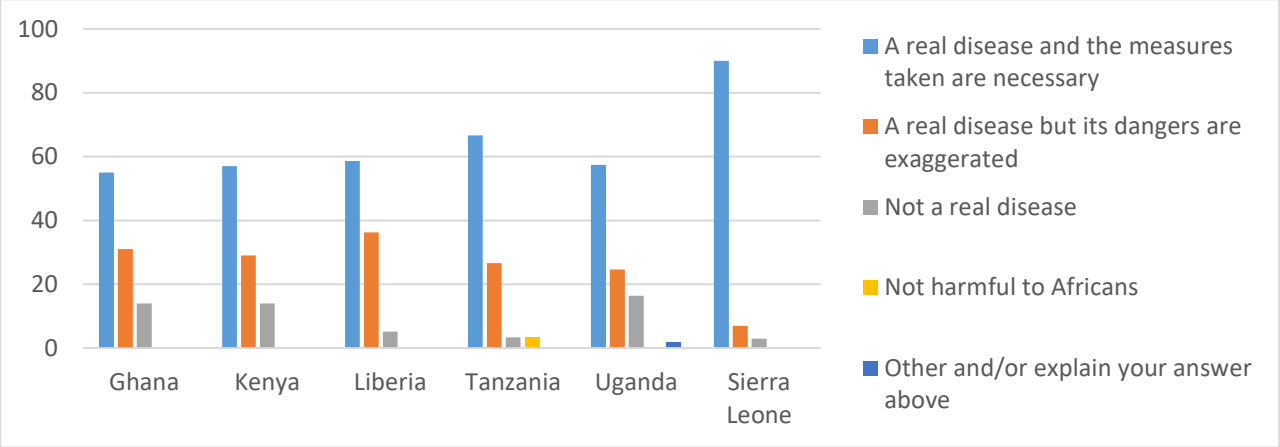
Figure 11: Communication of restrictions



Trust is important in the various institutions, as far as compliance is concerned. However, if the measures and restrictions are not clearly communicated there is a possibility that even if operators are willing to comply with them, they cannot do so because of confusion around what exactly they should be complying with in the first place. However, from

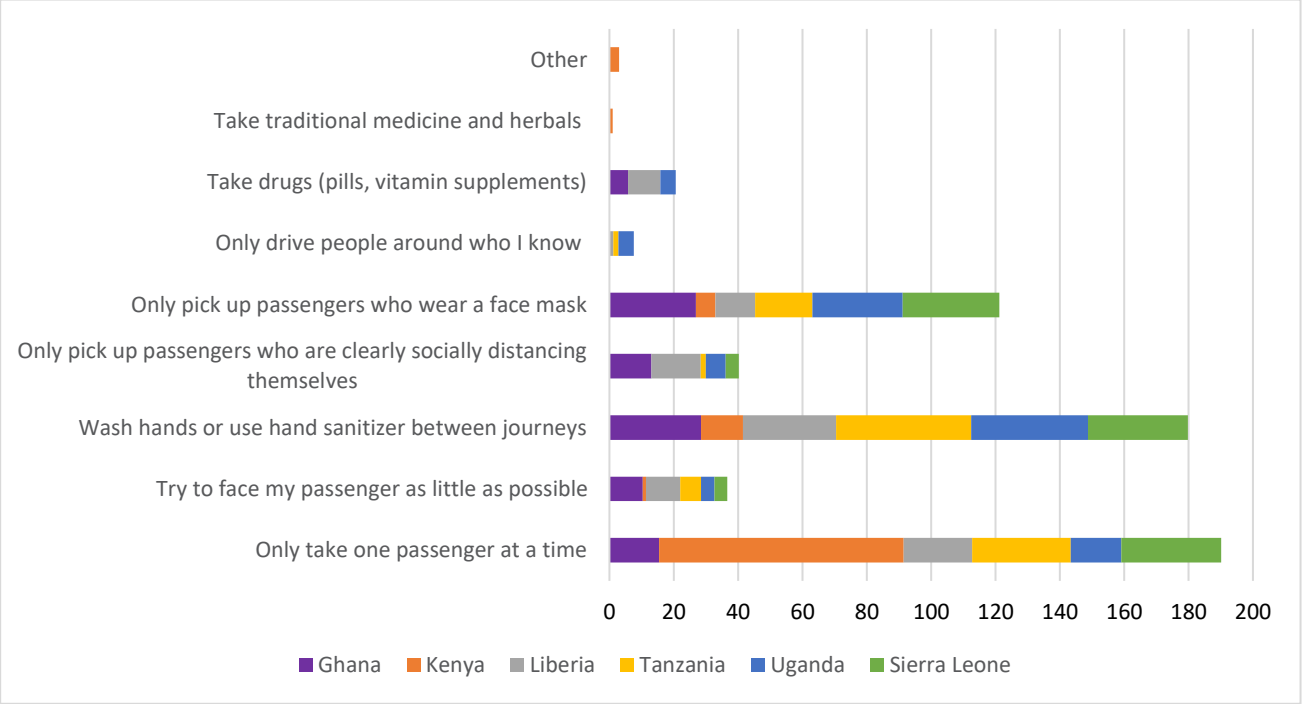
it is clear that the government (and the Department of Health) clearly communicated the restrictions, or at least, that is how the majority of those surveyed experienced it.

Figure 12: Perceptions about COVID-19



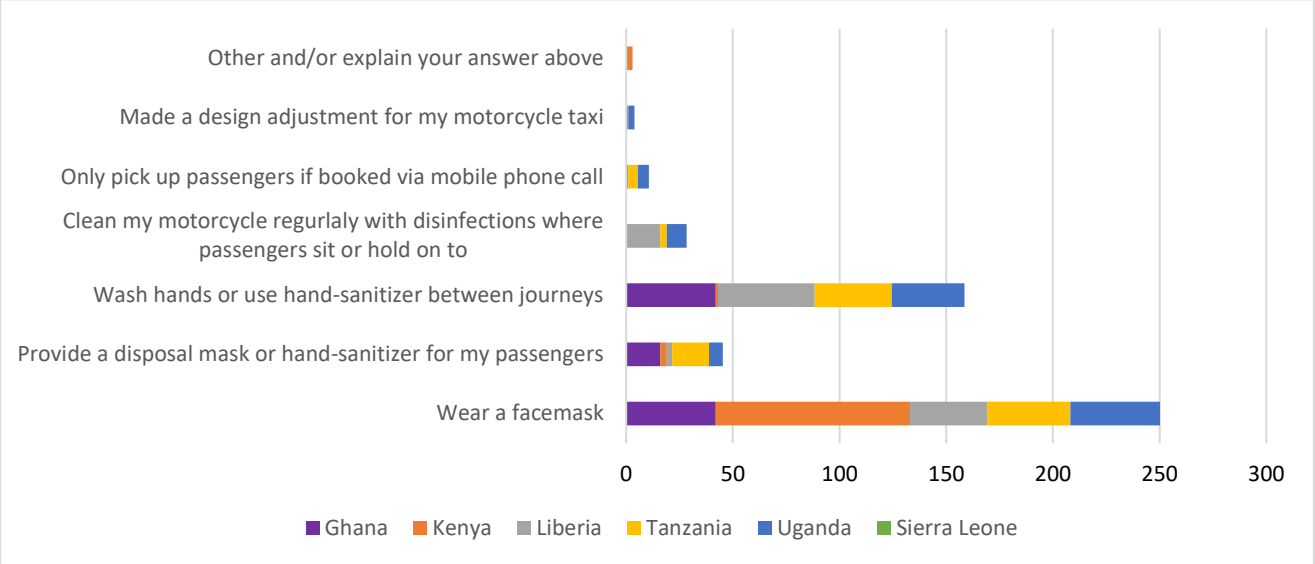
Another key factor for the level of compliance with restrictions is the extent to which the MCT/ MTT operators believe that COVID-19 is a real disease. Clearly, most operators believe that it is a real disease and believe the measures introduced are necessary. However, a significant percentage believe that although it is a real disease, the dangers are somewhat exaggerated (**Figure 12**). Given that COVID-19 is particularly severe or deadly for older people, while most motorcycle/ tricycle operators tend to be young, the dangers may be perceived as overexaggerated, given the operators' own situations.

Figure 13: Social innovations taken to reduce the spread of COVID-19



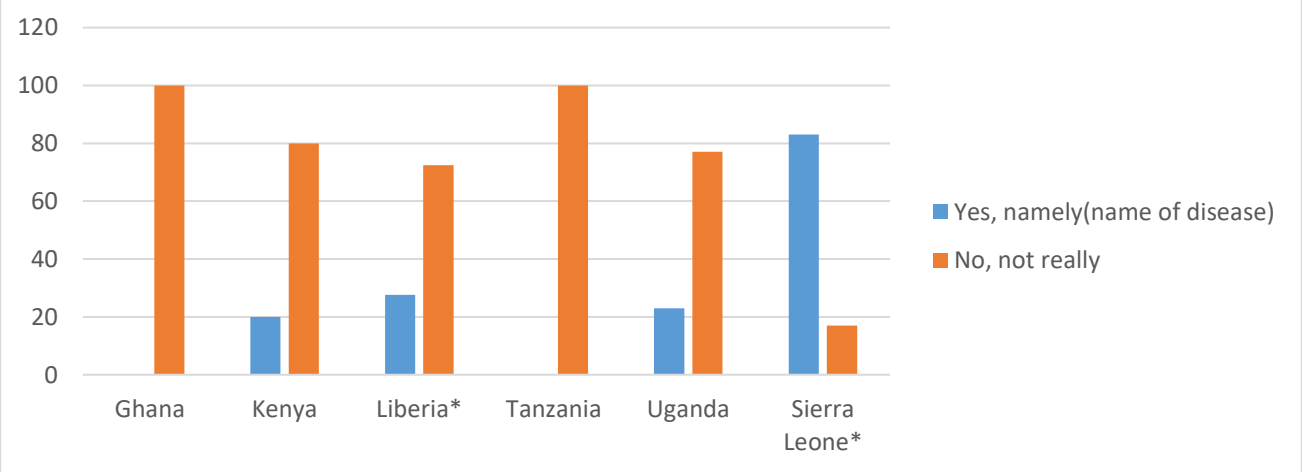
A whole range of social 'innovations' were taken by the operators (multiple answers possible) in response to the restrictions and/or to limit the spread of infection. Most of these 'innovations' were stipulated by the governments or were variations on what the government stipulated. Taking one passenger at a time and washing hands between journeys were the most common measures, followed by only picking up passengers who wear a facemask (See **Figure 13**).

Figure 14: Technological innovations used to reduce the spread of COVID-19



Again, we see many of the 'innovations' being the ones stipulated by the Government in general, or the Ministry of Health more specifically. There is a clear overlap between the social and technical innovations here. Few, if any, genuinely new innovations have been (self-)developed, although a few operators in Uganda indicated that they made an adjustment to their motorcycles (as shown in **Figure 14**).

Figure 15: Previous experience with health-emergencies



A final question focused on previous experiences of the operators with health emergencies. Most operators indicated that they had not really experienced something like COVID-19 before, but the operators in Sierra Leone referred to the 2014/15 Ebola crisis (**Figure 15**). While a third of those in Liberia referred to this as well, two-thirds of the Liberian operators did not refer to it, which is somewhat puzzling, given that the Ebola crisis only happened a few years ago.

6. Research uptake and next steps

6.1 Research uptake/ dissemination activities

The following outputs were produced:

- Six country reports, detailing the specific findings of the COVID-19 surveys, qualitative interviews, and focus group discussions during the city-workshops. All reports are accessible via the HVT website and the researchers' website (www.africawheels.org).
- One aggregated SSA report: the SSA report aggregated the findings and data from the six country reports (N=360 for aggregated surveys), with the report accessible via the HVT website and the researchers' website.
- One policy brief summarising key findings to make evidence-based suggestions for policy and practice, distributed to key stakeholders (ministries, city councils, donors, unions, etc.) with the policy brief accessible via the HVT website and the researchers' website.
- A sharing platform for MCT operators (e.g. Motorcycle Taxi operator Facebook page/ webpage): the sharing platform is a free of cost platform with the findings of the country reports, briefs and the SSA report uploaded. It will also have a space for MCT operators and other relevant stakeholders to exchange COVID-19-related innovations and 'best practices'.
- A collection of audio/ visual peer-to-peer footage: the footage collected in the six research countries is available (subject to consent) on the sharing platform, so that MCT operators and key stakeholders in other countries can access this.
- One academic publication: a jointly authored open-access journal article, specifically aimed at a transportation-focused journal (forthcoming).

To further promote uptake of the research findings, the reports and briefs are disseminated to the key stakeholders interviewed for this study.

6.2 Planned next steps

The motorcycle taxis – and more recently, motor-tricycles – remain an 'under-researched' subject, particularly given their substantial role in urban (and rural) transport in Sub-Saharan African countries and the livelihoods they directly and indirectly support. Transport policies do not yet fully reflect the importance of the sector and are not necessarily driven by evidence. The report has shown a number of missed opportunities in designing and implementing COVID-19 measures for and in partnership with the MCT/ MTT sector. It is evident that more research and understanding is required to better inform policy-makers. The authors are keen to conduct more research – driven by the needs of the transport providers (operators), transport users (passengers), transport regulators and relevant policy makers. Its network provides it with the possibility to conduct this research in a comparative and, if possible, more in-depth manner.

6.3 Low-income countries planned for upscale

Given that six countries were involved in this study, the researchers are confident that the findings are considerably representative of the conditions in Sub-Sahara Africa, or at least of those in East and West Africa. The countries where the research was conducted represent a number of scenarios, including for instance where regulations and measures were rather limited (Tanzania) or where motorcycle taxis and tricycles are *de jure* – but not *de facto* – illegal (Ghana). The researchers are therefore convinced that the findings of this study are of use to other SSA countries.

7. Conclusion

This study aimed to understand the impact of the COVID-19 outbreak (including the measures and restrictions put in place to reduce its spread) on the urban motorcycle taxi sector in six SSA countries (Sierra Leone, Liberia, Ghana, Uganda, Kenya and Tanzania), using a mixed methods approach. Key stakeholder interviews and MCT/ MTT surveys were conducted in two cities in each of the six countries. The findings were shared in city workshops and a regional (Sub-Saharan Africa) Webinar involving various stakeholders at national level like transport officials, urban planners, academics, and MCT union leaders and operators.

COVID-19 became a serious issue in March/ April 2020, with all countries responding quickly. However, the nature of these responses varied considerably: the most extensive and strictest public health, political and law enforcement measures were decreed in Uganda while neighbouring Tanzania had the least extensive and strictest COVID-19 measures.

The survey findings (and key stakeholder interviews) indicate that the pandemic had significant economic impacts on the motorcycle taxi operators, with the data also suggesting social, political, and psychological impacts. A reduced earning capacity due to lockdown and restrictions on offering passenger transport was widely reported, but in more than a few cases motorcycle taxi operators indicated higher earnings due to their ability to (illegally) circumvent checkpoints. The consequences of low earnings were multifaceted, including an inability to meet personal needs, failure to meet social and financial obligations, indebtedness and loss of livelihoods. Low earnings further resulted in hiking of fares for trips, due to "reduced" load, but mainly an inability to carry passengers.

The restrictions on MCTs also underscored the importance of livelihood diversification for sustainable livelihoods, something that was clearly reported for Uganda. Many drivers diversified into business, agriculture, and construction to augment low earnings from MCTs. Changes in the location/ route of operation was also noted in Liberia. The destruction of MCT livelihoods triggered reverse – that is urban to rural – migration, which resulted in MCT cooperatives or unions losing revenue due to non-repayment of motorcycle taxi loans and membership fees.

It should be noted that the transport-related restrictions by government and urban authorities were generally non-consultative as were the public health measures. The main exception to this is Sierra Leone where the government engaged with the MCT and MTT unions right from the onset of the epidemic. Limited or no consultation must have contributed to the lower compliance levels. Overall, compliance with the entire set of restrictions was short-lived and often became symbolic in nature.

MCT operators came up with a few social and technological innovations and adaptions, overwhelmingly in the form of variations or enhancement on the general measures of wearing face masks and sanitising hands. Interestingly, the MCT operators in all countries indicated that the role of mobile phone technology increased, with instant-text messages and mobility on demand apps used to arrange for pick-ups of passengers and goods, or to make mobile payments. The degree to which these technologies were used very much reflected the level of roll out of internet technology in the country more general, and it was therefore no surprise to see relatively limited use in Liberia. Thus, to realise the potential of online App technologies for the motorcycle and motor-tricycle taxi sector, a continued roll out in SSA countries is necessary while simultaneously the cost of data should decrease.

No research has yet (to our knowledge) established if motorcycle taxis are a lower risk form of transport – as far as transmission of COVID-19 is concerned – than more conventional forms of transport. Many of the key informants in the case study countries raised doubts concerning the hypothesis that it is indeed a safer means of public transport. However, many transport users perceived it as safer and therefore it remained a popular means of transport, despite it being restricted or banned. This again makes the case for the need for the government/ Ministry of Health to seriously engage and collaborate with the sector and motorcycle/ motor tricycle taxi unions.

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APPENDIX A: KEY STAKEHOLDERS INTERVIEWED

GHANA - representatives of the following organisations/ institutions were interviewed:

- Motor Traffic and Transport Department (MTTD), Ghana Police Service, Ashanti Regional Headquarters
- Aboabo Market Association, Asokore Mampong Municipality
- Dr Mensah Market Women's Queen, Kumasi Metropolis
- Ghana Health Service, Ashanti Regional Health Directorate
- Kumasi Stadium Taxi Rank (PROTOA), Kumasi Metropolis
- National Road Safety Authority (NRSA), Ashanti Region
- Pragiya and Okada Drivers Union (PODU), Asokore Mampong Municipality
- MTTD of Ghana Police Service, Accra Central Division
- Department of Transport, Accra Metropolitan Assembly
- Ghana Health Service, Headquarters, Accra
- Ghana Health Service, Greater Accra Regional Health Directorate
- Motorcycle and Tricycle Riders Association (MoTRA) Ghana
- National Road Safety Authority, Greater Accra Region
- MTTD of Ghana Police Service, Kaneshie Division, Accra
- Kaneshie Taxi Union (Co-operative), Kaneshie Market, Accra

KENYA - representatives of the following organisations/ institutions were interviewed:

- Kisumu Central Police Division
- Kisumu Regional Office
- Kisumu City Transport Dept
- Directorate of City Planning, Kisumu
- Directorate of Public Health, Kisumu
- SHG Leaders, Kisumu
- Kibuye Market Traders Association, Kisumu
- Nairobi Central Police Division
- Nairobi Regional Office
- Nairobi City Dept of transport.
- Directorate of City Planning, Nairobi
- Directorate of Public Health, Nairobi
- SHG Leaders, Nairobi
- Muthurwa Market Traders association, Nairobi

TANZANIA - representatives of the following organisations/ institutions were interviewed:

- Transport Engineer, Dar es Salaam
- Traffic Police, Dar es Salaam
- Land Transport Regulatory Authority, Dar es Salaam
- Motorcycle Taxi user representative, Dar es Salaam
- Motorcycle Taxi Union, Dar es Salaam
- Heath Ministry, medical office, Dar es Salaam
- Government town planner, Morogoro
- Motorcycle Taxi user representative, Morogoro
- Motorcycle Taxi Union, Morogoro
- Medical Officer, Morogoro

LIBERIA - representatives of the following organisations/ institutions were interviewed:

- Motor-tricycle taxi union representative, Ganta
- Motor-tricycle taxi union representative, Monrovia
- Motor-tricycle tax operators' spokesperson, Monrovia
- Motorcycle taxi union representative, Ganta
- Motorcycle taxi union representative, Monrovia
- Motorcycle taxi operators' spokesperson, Monrovia
- Health Services representative, Monrovia
- Ministry of Transport representative, Monrovia
- Traffic Police representative, Monrovia
- Health Service representative, Ganta

UGANDA - representatives of the following organisations/ institutions were interviewed:

- Motorcycle taxi union representative, Kampala
- Transport Engineer KCCA, Kampala
- Motorcycle taxi cooperative representative, Kampala
- Motorcycle taxi union administrator, Kampala
- Motorcycle taxi union chairman, Kampala
- Marketing Manager, ZOCTU, Kampala
- Motorcycle taxi association chairman, Kampala
- Commercial officer, Mbarara
- Regional Traffic Office representative, Mbarara
- Community Development representative, Mbarara
- Regional marketing executive, Mbarara
- Credit officer, EBBO SACCO, Mbarara

SIERRA LEONE - representatives of the following organisations/ institutions were interviewed:

- Sierra Leone Commercial motorbike riders union representative, Freetown
- Sierra Leone Commercial Tricycle Association representative, Freetown
- Sierra Leone Traders Union spokesperson, Freetown
- Petty Traders Association, Freetown
- Lumley Market, Freetown
- Motor Drivers and General Transport Workers union representative, Freetown
- Representative of the Ministry of Health, Freetown
- Lecturers at Fourah Bay College (2x), Freetown
- Student representative Fourah Bay College, Freetown
- Sierra Leone Commercial motorbike riders union representative, Bo
- Sierra Leone Commercial Tricycle Association representative, Bo
- Sierra Leone Traders Union spokesperson, Bo
- Petty Traders Association, Bo

APPENDIX B: KEY STAKEHOLDER QUESTIONS

Project Title: Accelerating Covid-19 related 'best practice' in the urban motorcycle taxi sector in Sub-Saharan Africa

Introduction: This survey/interview is funded by UK Aid via the High Volume Transport Programme in order to better understand the impact of COVID-19 on the transport sector, and specifically the motorcycle taxi sector, in 6 African countries. Participation in the survey/interview is voluntary and there is no financial compensation available, but the researchers do hope that your responses will help to inform policy makers and practitioners to develop good and evidence-based interventions. Your answers will be anonymised, so we will not link your name to your answers, and aggregated with other responses. However, we do ask you to provide your name and mobile number, in case we want to contact you again for further questions and/or to share with you the findings of our study.

Signature of interviewee

Interview number (to be linked to name and phone-number of interviewee, kept on a separate piece of paper).

Date:

Location:

Name of data collector:

COVID-Q1 What have been the impacts/effects of COVID-19 on urban transport in general and the motorcycle taxi (MCT) sector specifically?

COVID-Q2 If transport-related restrictions or a lockdown were introduced, what were these specifics of these, to what extent have motorcycle taxi unions and/or riders consulted in this and to what extent have MCT riders been in compliance with these?

COVID-Q3 Are there any social or technological innovations or adaptions MCT riders can take or have been taken to reduce exposure and limit the spread of COVID?

COVID-Q4 Have experiences with and responses to previous outbreaks/pandemics been used when addressing the current COVID outbreak (for Sierra Leone and Liberia, think Ebola, for other countries, think for instance tuberculosis, feared to be spread by using shared helmets)?

COVID-Q5 If motorcycle taxi transport, from all the modes of public transport (shared-car taxi, mini and midi-bus, etc.) poses the lowest risk of COVID transmission, do you think that motorcycle taxi transport should be promoted?

APPENDIX C: MOTORCYCLE/ TRICYCLE OPERATOR QUESTIONS

Project Title: Accelerating Covid-19 related 'best practice' in the urban motorcycle taxi sector in Sub-Saharan Africa

Introduction: This survey/interview is funded by UK Aid via the High Volume Transport Programme in order to better understand the impact of COVID-19 on the transport sector, and specifically the motorcycle taxi sector, in 6 African countries. Participation in the survey/interview is voluntary and there is no financial compensation available, but the researchers do hope that your responses will help to inform policy makers and practitioners to develop good and evidence-based interventions. Your answers will be anonymised, so we will not link your name to your answers, and aggregated with other responses. However, we do ask you to provide your name and mobile number, in case we want to contact you again for further questions and/or to share with you the findings of our study.

Signature of interviewee

Interview number (to be linked to name and phone-number of interviewee, kept on a separate piece of paper)

Date:

Location:

Name of data collector:

Member of motorcycle taxi union: YES/NO
Motorcycle taxi operator or motor-tricycle taxi operator:

COVID-Q1a The impact of COVID-19 on my job as a motorcycle taxi rider is/was:

1. Very large and mainly negative
2. Very large but mainly positive
3. Not very large, but negative
4. Not very large, but positive
5. No real impact, either positive or negative
6. Other and/or explain your answer above ……

COVID-Q1b During the COVID-19 the number of MCT journeys I made/make per week:

1. Increased a lot
2. Increased a little
3. Remained more or less the same
4. Decreased a bit
5. Decreased a lot
6. No journeys were made at all
7. Other and/or explain your answer above ……

	Pre-Covid normal day	Pre-Covid busy day	During Covid normal day	During Covid busy day	During Covid-lockdown normal day	During Covid-lockdown busy day
Number of journeys per day*						
Duration of total number of trips in time (hours per day)						
Duration of total number of trips in distance (kilometres per day)						

*For the interviewer: while exact number may be difficult to recall, key is to find out relative changes between the various column categories.

** For the interviewer: while the exact length in time or kms may be difficult to recall, key is to find out relative changes between the various column categories.

COVID-Q1c Please explain the reasons for the changes in the boxes in the above table.

COVID-Q2a What restrictions on MCT riding were introduced during the lock-down? (please tick all that apply)

1. MCTs were not allowed to operate during the lockdown ❑
2. MCTs were only allowed to operate along certain routes/in certain areas ❑
3. MCTs were only operated to operate during certain times of day or night ❑
4. MCTs were limited to operate with no more than 1 passenger ❑
5. MCTs were only allowed to operate if following certain health measures, such as …… ❑

6. No restrictions were imposed on the operation of MCTs ❑
7. Other and/or explain your answer above …… ❑

COVID-Q2b Were the above restrictions

1. Overall, clearly communicated by the government and health department/ministry
2. Generally, clearly communicated by the government and health department/ministry, but there has been some confusion at times
3. Not clearly communicated by the government and health department/ministry, with lots of confusion over what is allowed and what is not allowed.
4. Other and/or explain your answer above ……

COVID-Q2c Do you trust the following institutions regarding COVID restrictions and measures taken?

	Always	Most of the times	Sometimes	Never	Do not know
The government					
The health department/ministry					
The police/army					
Motorcycle taxi unions					

COVID-Q2d Have motorcycle taxi unions and operators been consulted or involved in designing these rules?

1. Yes, I have been involved in it myself
2. I have not been involved in it but I know my MCT union has been consulted or involved in it.
3. No, we, riders and the unions, have not been consulted or involved in formulating the rules
4. Other and/or explain your answer above……

COVID-Q2e Who enforced the above restrictions? (tick all that apply)

1. Traffic Police ❑
2. Army ❑
3. MCT unions (through MCT wardens, if in place) ❑
4. Peer pressure from fellow MCT operators ❑
5. Self-compliance ❑
6. Other and/or explain your answer above…… ❑

COVID-Q2f Compared to normal times, have those who enforced the above restrictions been?

1. Much more forceful (higher fines, confiscation of motorcycle, etc.)
2. As strict as in normal circumstances
3. More lenient and understanding (not giving fines for instance)
4. Other and/or explain your answer above ……

COVID-Q2g To what extent were the above restrictions followed by MCT operators?

1. All MCT riders followed the rules all of time
2. Most MCT riders followed the rules most of the time
3. Some riders followed the rules but many did not

4. Most MCT riders did not follow the rules most of the time
5. All MCT riders did not follow the rules at any time
6. Please provide examples of how rules were broken by MCT riders ……

COVID-Q2h Do you think that COVID is?

1. A real disease and the measures taken are necessary
2. A real disease but its dangers are exaggerated
3. Not a real disease
4. Other and/or explain your answer above……

COVID-Q3a What social measures or innovations have you and other MCT riders taken to reduce exposure and limit the spread of COVID (tick all that apply)

1. Only take one passenger at a time ❑
2. Try to face my passenger as little as possible ❑
3. Wash hands or use hand-sanitizer between journeys ❑
4. Only pick up passengers who are clearly socially distancing themselves ❑
5. Only pick-up passengers who wear a facemask ❑
6. Only drive people around who I know ❑
7. Take drugs (pills, vitamin supplements, herbals, traditional medicine, etc.) ❑
8. Other and/or explain your answer above: …… ❑

COVID-Q3b What technological measures or innovations have you and other MCT riders taken to reduce exposure and limit the spread of COVID (tick all that apply)

1. Wear a facemask ❑
2. Provide a disposal mask or hand-sanitizer for my passengers ❑
3. Wash hands or use hand-sanitizer between journeys ❑
4. Clean my motorcycle regularly with disinfections where passengers sit or hold on to. ❑
5. Only pick up passengers if booked via a mobile phone call ❑
6. Made a design adjustment for my motorcycle taxi ❑
7. Other and/or explain your answer above: ……. ❑

COVID-Q4a Previous outbreaks of diseases/pandemics have affected my motorcycle taxi job

1. Yes, namely (name outbreak/disease)
2. No, not really

COVID-Q4b If answered yes to the above question, in what way have previous outbreaks prepared you:

……

COVID - Q5a If you have gained new regular customers what are the reasons quoted for them switching to motorcycle taxis (tick all that apply):

1. Another mode of transport not available on my route ❑
2. Frequency of other modes is reduced ❑
3. Irregular service from other transport modes ❑
4. Fear of Covid19 infection from using other modes of transport ❑

5. Easier to socially distance from other passengers on motorcycle taxis ❑
6. Other passengers not wearing masks and/or following government guidance ❑
7. The journey now takes much longer on other transport modes ❑

Other reasons (please specify) ……..

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