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Regulating the moto-taxi informal transport industry in Nacala-Porto Municipality, Mozambique

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2024

University of the Witwatersrand, Johannesburg

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REGULATING THE MOTO-TAXI INFORMAL TRANSPORT INDUSTRY IN NACALA-PORTO MUNICIPALITY

By

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(2629299)

Research Report

A Research Report Submitted in partial fulfilment of the requirements for the degree of

Master of Management in Governance

In the Faculty of Commerce, Law and Management, at the University of the Witwatersrand, Johannesburg, South Africa

Supervisor: Dr Caryn Abrahams

28 February 2024

ABSTRACT

In developing countries, the recent growth of urban population has brought along several challenges to the already limited provision of essential public services. Along with heavier traffic, pollution, and limited access to essential public services, youth unemployment continued to grow and access to urban transport deteriorated. At the same time, the inability by governments to respond to these challenges, has created an opportunity for the emergence of innovative solutions, such as the moto-taxi, which provided affordable transport and created employment opportunities for youth, yet flourishing as an informal industry. Nacala-Porto is among the cities that faced this movement.

This research aimed to critically analyse the process that the government of Nacala-Porto, a municipality in northern Mozambique, has followed to regularise the emergence of informal moto-taxi industry, given its accompanying two-folded reality: of a solution to a concrete public provision gap, that brings along, important concerns. The study was designed as qualitative research, with a focus on exploring the beliefs and perceptions of key actors in this informal industry, and enriching the body of knowledge on the subject, which is currently not well documented for that municipality. Building on the rich literature on the subject borrowed from other developing countries, the study has shown that this informality has been seen as contributing to filling the gap in provision of public transport services in the municipality, and thus, important steps have been taken to regularise the sector. Actual steps taken by the municipality, included (i) adjusting the existing policies and regulations (in the form of the municipal stance), to accommodate the novel form of transportation; (ii) capacity building of the moto-taxi drivers, to understand the requirements built into the revised stance; (iii) supporting the creation of a formal structure for the sector, in the form of moto-taxi driver association, despites not having taken-off; and (iv) establishing law enforcement mechanisms through the municipal police, although recognized as being weak. Despites the important steps taken, policy gaps prevail, especially on establishing comprehensive standards for the operators in the sector, but more importantly, on law enforcement, which leads the sector to continue to operate far from the goal of ensuring access to safe, affordable, accessible, and sustainable transport systems for all.

Key words: Nacala-Porto, informality, public provision, moto-taxi, regularisation, urban transport

DECLARATION

I declare that this report is my own, unaided work. It is submitted in partial fulfilment of the requirements of the degree of Master of Management (in the field of Public and Development Sector Monitoring and Evaluation) in the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in any other university.



Caximo Paulino Nuno Caximo

28 February 2024

DEDICATION

For my family (my wife Silvia Caximo, and my two boys Dylan and Dylson) for being such a continued motivation to take up this challenge, and for supporting me throughout the study process. My parents, Paulino Nuno Caximo and Carlota Pirua, for being an inspiration for growth. For Hayley Bryant, my former work supervisor, who supported my enrolment, despites the high demanding work.

ACKNOWLEDGEMENT

I am grateful to my supervisor, Dr Caryn Abrahams for her guidance throughout the research process; my colleagues from the 2022 BCA01 Block Release Cohort, for the excellent group collaboration and peer motivation, throughout the course. Without their assistance, this research would not be possible. For Ms Emília Cardoso, who supported data collection.

Thank you

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GLOSSARY OF TERMS

- **Licence** – a document issued by the municipality, confirming authorization for an activity, in this case, transportation, and this document has always to be in the vehicle.
- **Opportunistic Taxi Drivers** – people who do not have the moto-taxi activity as their main livelihood, or do not spend the day at a rank, but carry passengers when an opportunity arises. For instance, as they are going to or returning from a specific destination, they may find people willing to pay to go along.
- **Rank** – parking space properly signposted and designated for rental vehicles.
- **Public Transport** – paid transport carried individual ou collective entity authorised to carry out the activity for commercial purposes.
- **Moto-taxi** - a motorised two-wheeled public conveyance, with a one-passenger bench mounted behind the driver.

LIST OF ABBREVIATIONS

AfCAP	Africa Community Access Partnership
AMONAC	Association of Moto-Taxi Drivers of Nacala-Porto
AMOPAIP	Mozambican Police Association
AU	Africa Union
AVOTANA	Voluntary and Orientation Association of Moto-Taxi Drivers of Nampula
CIPROCFC	Union of Owners of Driver Training Centers
DESA	Department of Economic and Social Affairs
DFID	Department for International Development (United Kingdom)
DRC	Democratic Republic of Congo
FERWACOTAMO	National Cooperative Confederation of Rwanda
GHG	Greenhouse Gas
GPS	Global Positioning System
ILO	International Labour Organisation
ITF	International Transport Forum
MoU	Memorandum of Understanding
MZN	Mozambican Metical
PESR	Road Safety Policy and Strategy
PPP	Public-Private Partnership
ReCAP	Research for Community Access Partnership
SADC	Southern African Development Community
SDG	Strategic Development Goal
TERI	The Energy and Resources Institute
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
UNFCCC	United Nations Framework Convention on Climate Change
UN-Habitat	United Nations Human Settlement Programme
WHO	World Health Organisation

WIEGO	Women in Informal Employment: Globalizing and Organizing
ZAR	South African Rand
ZEE	Special Economic Zone

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CHAPTER 1: INTRODUCTION

1.1. Background

Public provision of adequate goods and services to the citizens, continues to be a problem facing governments in both developing and developed countries (Avis, 2016). With the increasing population in urban areas, the gaps in public provision of goods and services has become more pronounced in urban areas, compared to rural, and it has become generalised to most of the relevant public services (Olvera et al, 2020). Demand for urban mobility, through adequate, accessible, safe and affordable public transportation, is among the public services that are observing an increasing demand for mobility, especially in recent years, and are puzzling governments in developing countries (Cervero, 2000). This is a paradoxical situation (Kumar, 2011), especially in the developing countries, since while, on the one hand, the ownership of private transport is low, on the other, the capacity of the public forms of transportation (the called mass transportation modes), is at decline (Kumar, 2011). In addition, the burden on developing countries is exacerbated by the emergence of additional and related concerns, such as pollution, road congestion, accidents, shortage of public mass transport supply to respond to increasing demand, environmental degradation, contribution to climate change, crisis in the energy sector, and issues of accessibility for the poor facets of the population (Pojani & Stead, 2015).



Courtesy: Karingana, Lda

The inability to respond to these challenges through formal government public provision, has challenged the citizens to seek alternatives, by looking beyond the classic solutions, and identifying localised solutions. In Mozambique, in most of the cities the solutions have taken the form of adoption of motorcycles for public transportation, in return of a fare (Mabucanhane, 2018).

Globally, these “paratransit” solutions have emerged as an informal activity, triggered by the identified and concrete opportunities. The informality, if on the one hand, has proven the ability to fill in the existing gaps in public provision, on the other, has brought along, challenges that needed to be addressed, including issues of road safety. Nonetheless, different measures have been taken in different contexts, which are rooted in the frame from which the society and authorities look at the matter.

This report highlights findings from research conducted in the Municipality of Nacala-Porto, in Nampula Province in Mozambique, to critically discuss the elements of regulation to the moto-taxi activity put in place by the local government in that municipality. The report starts by analysing the existing literature, from similar contexts where the informality has emerged, which includes studies conducted in developing countries in Latin America, Africa and Asia. This aims to set the frame for a broader understanding of the phenomenon before the local reality is brought into perspective. Analysis of the literature is preceded by a discussion of the problem and questions that the research intends to address, as to clarify the scope of the study. The report also enlightens on the methodological framing of the research conducted, as well as discusses the main results and conclusions and recommendations that emerged from the key findings.

The report shows the perspective from which the municipality of Nacala-Porto views the informal moto-taxi activity. It is seen as an alleviation to the unmet and growing need for affordable and accessible transportation by the population, which has triggered the interest, by the authorities, to adapt the existing policies and legislation, to accommodate the peculiarities of this emerging activity. The benefits associated with the activity, on the one hand, and the risks involved that flourish from the lack of specific standards and regulations, on the other, have made the municipal government to take actions on the matter. However, while a lot has been done at the policy level, there are important factors hindering the effectiveness of the institutionalised measures.

1.2. The Context of Mozambique and Nacala-Porto

Mozambique is a country located in southeast Africa, in the southern Africa region, bordered by the Indian Ocean on the east, Tanzania on the north, Malawi and Zambia to the northwest, Zimbabwe to the west, and Eswatini and South Africa to the southwest (Wikipedia, 2024). With a total of 11 provinces (Maputo City, Maputo Province, Gaza, Inhambane, Sofala, Manica, Tete,

Zambezia, Nampula, Cabo Delgado and Niassa), the country has a diverse 34 million people, distributed along the 799 380km² of its territory, with an estimated population density of 36,1 habitants per km2, which is higher in urban areas (compared to rural). The country's share of population in urban areas was estimated at 38.75% in 2023 (Statista, 2024).

Given its geographical local, Mozambique is a member of Southern African Development Community (SADC), playing an important in transports and communications, given its strategic position at the coast (with a coastline of around 2700 kms), where three transport corridors have been established (Maputo, Beira and Nacala Corridors), that allows countries in the hinterland (South Africa, Zimbabwe, Malawi, Zambia, and other), access to the sea, for their economic activity.

With a per capita GDP of US$ 604.80[1] , Mozambique is amongst the poorest countries in the world (7th lower-ranking countries as per the 2023 UNDP HDI), with the poverty being more intense in the rural areas, than urban (World Bank, 2024). Unemployment in Mozambique was estimated to be at 18.4% in 2023, with very minimal sex differences (18.7% for males and 18.1% among females), while significant differences exist between rural and urban areas, with urban areas facing higher unemployment rates (31%) compared to 12.1% rural area (AIM, 2023).

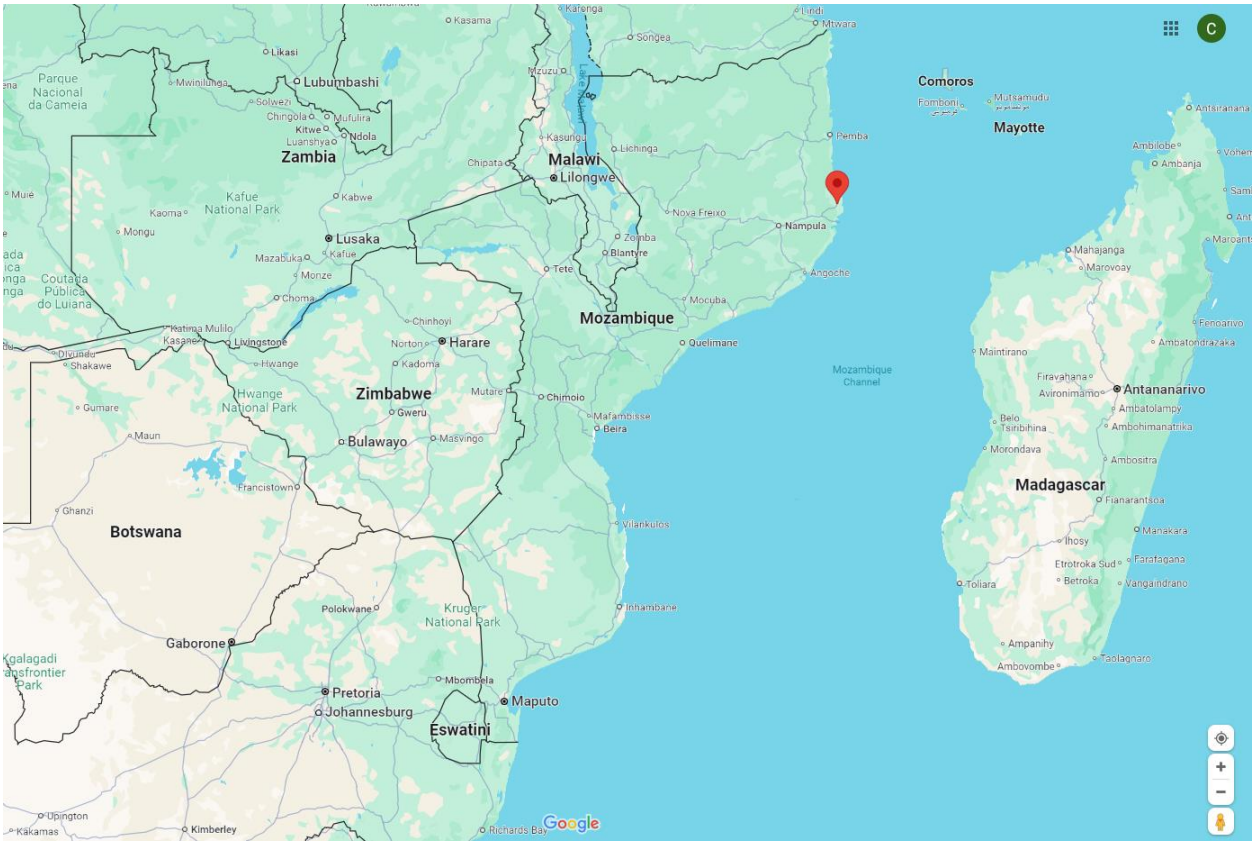
Among the important economic hubs is the district of Nacala-Porto. This hosts a municipality with the same name, located in Nampula province, northern Mozambique. Nampula is the most populated province in the country, with around 6 million habitants (2017 census), distributed along an area of 79,010 km2, and an economy that relies mostly on agriculture (cotton, cashew nuts, tobacco, cereals and oleaginous crops) and on gems and other minerals (Wikipedia, 2024).

Nacala-Porto, in its turn, has an economy mainly dependent on (i) port activities, as being the location of one of the most significant deep-sea ports in the country, that handles various exports, and connecting various destinations through the Nacala corridor (railways and road); (ii) transport and logistics, with connections to Malawi, Zambia and other countries in the hinterland (Wikipedia, 2023); (iii) industrial development, which growth was triggered by the deep-sea natural port, and the economic power of the province where it is located; (iv) agriculture, that contributes to local food supply, with main crops being maize and cassava, essential for food

[1] The World Bank Group (2024)

security; and (v) tourism, that although contributing modestly to the local economy, the considerable extension of the cost in the district, opens opportunities for beach tourism, and related activities (World Bank, 2021).

Figure 1 - Location of Nacala-Porto Municipality



Source: Google maps app. Extracted on Tuesday, August 27, 2024, 7:45:13 PM

Although specific information for Nacala Porto is scarce, it is assumed that the informal sector is the major source of employment for the citizens in active age, as is the case in the entire country. The International Labour Organisation (ILO, 2020), in Mozambique, informal employment contributes to 80% of the country's total employment. According to ILO (2020) the most marginalised groups from formal employment are youth and women, who count on the opportunities in the informal sector for their economic inclusion.

1.3. Research Problem

Over the past decade, the use of motorcycle as a form of paid public transportation has observed a significant growth, in the developing world, including in Latin America, Sub-Saharan Africa and

Asia (Kumar, 2011), and this growth has been triggered by advantageous features of the mode of transportation, including ease manoeuvrability, ability to travel in poor roads that make significant portion of these counties, flexible working times, and the demand responsiveness, that excel from other forms of transportation. Nevertheless, these advantages have been coupled by various shortfalls associated with this mode of transportation (increased road accidents, traffic management problems, pervasive noise, and increased air pollution), but without stopping its rapid growth.

Considering the pros and cons of the sector, governments were required to come into play, and take position and actions, which have been based on their views on the sector, vis a vis the goal of adequate provision of transportation services (Fuchs & Fuchs, 2021). These measures included the creation of sector-specific regulations. While some governments have followed the pathway that allowed absorption of the activity (by regulating the sector), others have adopted its prohibition/banning (Jha, 2022), as was the case of Ghana (Rollason, 2012). Kumar (2011) has stressed that, despites all efforts by governments, regulation of the sector has failed to completely prevent all the risks associated, for a more effective operation. The decline of the mass transportation means, combined with weak and inadequately staffed institutions at the government level, have not been able to strategically plan and regulate this market, leading to the uncontrolled growth.

Given this context, of both needed service to close an important gap in public provision, and dichotomous set of actions that can be adopted, that characterise the sector at a global perspective, it is important to understand the nuances around the growth of moto-taxi in Nacala-Porto. The limited information versing around the phenomenon in this municipality, demanded a dedicated analysis of the phenomenon in that municipality, to understand where governance of the sector stands, in as far as public policies are concerned, and how these measures are perceived by the population, whose well-being is intended to be safeguarded.

1.4. The research purpose

The aim of the research was to critically explore the elements of the regulation to the informal moto-taxi activity, implemented by the municipality of Nacala-Porto, in Nampula Province (Mozambique), as an emerging form of public transportation. The research took an exploratory

design to the local processes, using existing information on similar processes in other countries, as a basis for the local analysis.

The focus of the research on the regulatory side of the moto-taxi, stems from its relevance for the benefit of the public, as these regulations are mainly meant to guide the actions and behaviours of private actors, in a way that promotes public safety and welfare, and not necessarily as a punitive aim (Cervero, 2000). Thus, the interest in knowing what measures of regulation of the transport sector, has the municipality put in place for protecting the safety and welfare of the users and of the moto-taxi operators, on the one side, and how those users and operators perceive the implementation of those measures, is pertinent, to assess prevailing gaps.

1.5. The Research Question

The research aimed to respond to the following question:

- *What regulatory measures has the municipality of Nacala-Porto put in place, to govern the emerging informal moto-taxi transport?*
- *How do the moto-taxi drivers and users perceive the effectiveness of those measures in protecting their safety and welfare?*

These questions stem from the fact that the activity is growing in the municipality and may have brought some challenges along with the advantages for the citizens from the standpoint of public provision of transportation services. Existing literature brings a very rich discussion around the topic, and this was fundamental for framing the critical analysis of the local processes in the municipality of Nacala Porto.

1.6. Research Methods

The study was designed in a way to respond to the research purpose and question. The primary objective was to explore the existing knowledge from scholars that versed around the informal transport sector and construct a narrative that documents the elements of the regulations that the municipality of Nacala-Porto has implemented (or will need to implement) to address the challenges of the informality. This demanded a qualitative approach, and various data collection methods were used, including document analysis, semi-structured interviews, and non-participant observations, as will be described in detail in chapter 3.

CHAPTER 2-LITERATURE REVIEW

This section aims to present a discussion on relevant literature that covers moto-taxi activity from a global perspective, and where possible, using local documentation for the discussion. It starts with an overview of the basic features of the informal sector, and thereafter appraises the specific area of informal transport and the moto-taxi as an informal mode of urban public transportation. Finally, it investigates the processes/considerations that have been followed for regulating the sector in various countries, along with looking at existing and applicable policies from various agencies, that set boundaries or principles that should be observed in such regulatory processes. Important is to note the absence of sufficient literature versing around the moto-taxi activity in Nacala-Porto, yet some write-ups covering the province and country may be found.

2.1. What is public transport?

According to UN Habitat (2018), these are shared passenger transport services, available to the general public and which are provided for the public good. It may include cars, buses, trolleys, trams, trains, subways, and ferries that are shared by strangers without prior arrangement. It may also include informal modes of transport (paratransit) – but it is noted that these do not follow designated routes or stops. However, the definition excludes taxis, carpools, and hired buses, which are not shared by strangers without prior arrangement. This perspective is corroborated by

2.2. The concept of urban public transport

Urban public transport is defined as a set of services provided to the citizens as a public good (UN-Habitat, 2018), and may include various modes of transportation such as cars, buses, trolleys, trams trains, subways, ferries, and other, with a common feature of being shared among various users, without a prior arrangement, i.e., used by people who randomly happen to be using the same transport (UN-Habitat, 2018). According to UN-Habitat (2018), para-transits[2] may fit in this definition, which is a category that includes the moto-taxi.

[2] Paratransit is defined as "Any form of ground, passenger transportation that is demand-responsive, that requires the passenger to place a request with the service provider (by hail, telephone, or other electronic means), and that operates with flexible routes and/or flexible schedules tailored to the passengers' trips" (Lave & Mathias, 2009)

2.3. An Overview of Informality (the Informal Sector)

The emergence of a strong informal sector has been a subject for fervorous global discussion, and significantly growing in the most recent years, especially in developing countries. This rapid growth of the informal sector is a popular response to a combination of factors (Oviedo et al, 2009), that may vary from one context to another. With the recent growth in rural-urban migration (increase in urbanisation), which has been seeing higher rates in the 21st century, the phenomenon has seen an unprecedented increase (Sandoval, 2019).

Along with increased urbanisation, came an increased demand for public services, which could not be responded to, by the formal sector. In a context where urbanisation also created urban unemployment, the inability by the governments to respond to the increasing demand for public services, through adequate provision of needed public goods and services, has led to emergence of informal solutions (Olvera et al, 2020). These solutions have also found a fertile ground for flowering, in a context where the fast-paced urbanisation process was not accompanied by timely adjustments in the existing regulations to include those emerging informal activities. For Kumar (2011), this is a result of weak government institutions with very weak staffing to make adequate planning and control over the emerging and growth of the phenomenon.

Urban informality, understood as an area in urban governance[3], characterised by a state of exception from the formal order of urbanisation, was created as a bittersweet sector, which over the years has faced two opposing views from legislators and citizens: one as a state of crisis, and the other as a sign of heroism *(*Roy, 2005*)*, and the perspective each country has chosen, shaped the way informalities have been treated and the actions taken (Fuchs & Fuchs, 2021).

The view as a crisis, stems from the crisis management perspective, which has guided those sharing this view in governance (De Soto, cited by Roy, 2005). In other words, based on this frame, informality is viewed as chaos. The view was more prominent in the 1950s and 1960s, and looked at urban informality as a sort of transitional state, of a sector that would then be absorbed by the

[3] Urban Governance refers to "*how government (local, regional, and national) and stakeholders decide how to plan, finance and manage urban areas. It involves a continuous process of negotiation and contestation over the allocation of social and material resources and political power*" (Avis, 2016: 5)

formal sector, and disappear with the economic growth of the country (Chen, 2012). However, the view was proven unrealistic with time, since, with several challenges facing the developing countries, not only did this sector not disappear, but has grown in levels of participation in the economy (Stark & Teppo, 2022).

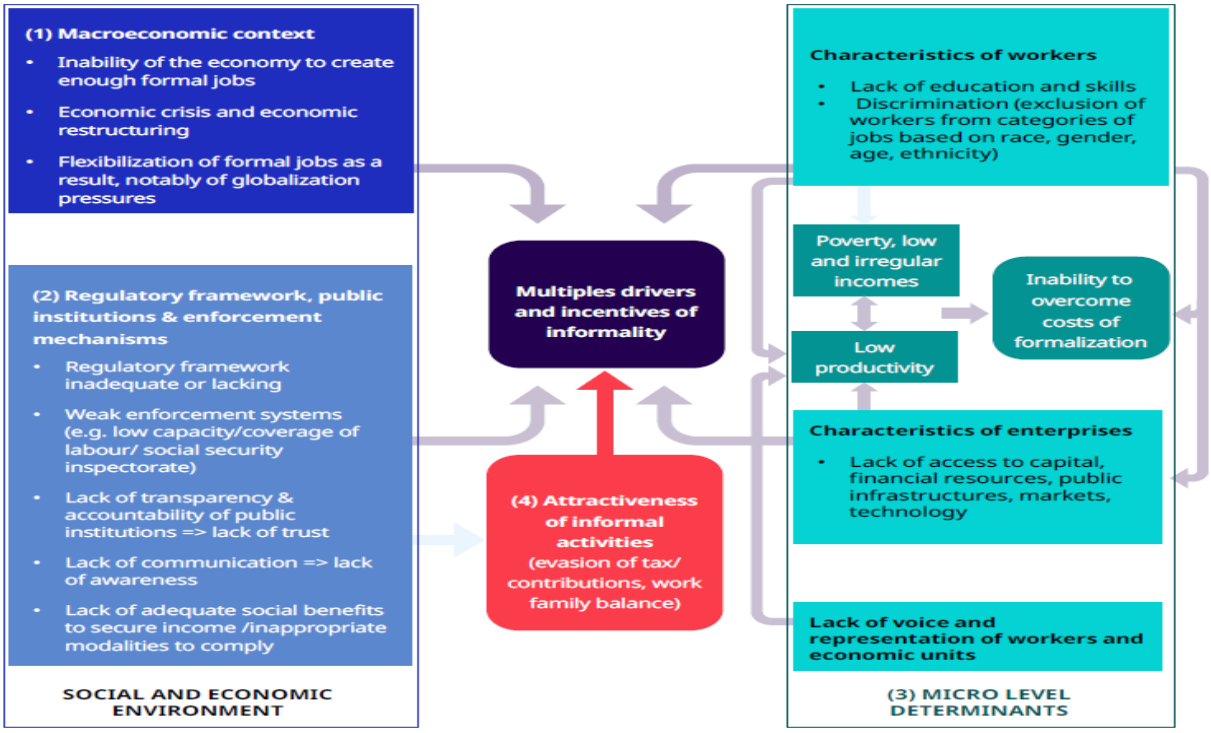
On the opposing side, are those that see informality through the frame of agency (or heroism), including Roy (2005), and these view urban informality as a sense of victory by the poor and excluded groups, who have created their own solutions to participate in the overall economic activities, by surpassing and overcoming the limitations of governments in combating the causes of poverty. This view looks at urban informality, not as parallel/marginal to the formal sector, but rather as interconnected, and collaborating with one another (Roy, 2005).

Regardless of the lens that frames the way the phenomenon has been seen, there is a consensus that its growth has been primarily triggered by the unexpected consequences of the economic adjustments in developing countries in 1980s and 1990s, that led to closure of some of the structural economic sectors/industries, or at the least, leading these companies to downsizing (Chen, 2012). The resulting growth of unemployment, that aggravated the already limited employment opportunities, exacerbated the difficulty of those laid-off in getting another formal employment. The high inflation, together with the reduction of the states' capacity to provide adequate public services, led to searching for alternatives outside those formal pathways. This is supported by the model of main drivers of informality by the International Labour Organisation (ILO). This model sees three main sets of factors that drive contemporary informal sector (ILO, 2021), which are also summarised in figure 1:

- *Economic environment (Macroeconomic Context)*: under this category are all those factors that determine the ability of the economy to create formal jobs. As most scholars have recognized, most of the informalities have arisen from the lack of alternative jobs (Leino, 2009).
- *Micro-level determinants*: including factors such as the characteristics of the workers (the level of education, possessed skills, etc), of the enterprises (such as level of access to financial resources for growth), and the ability of the employees to voice their concerns through mechanisms created for their representation.

- *Legal and regulatory framework, public institutions and enforcement mechanisms*, which consist of existence/absence of adequate regulation, capacity for law enforcement, etc.

Figure 2 – Main drivers of informality (ILO, 2021)



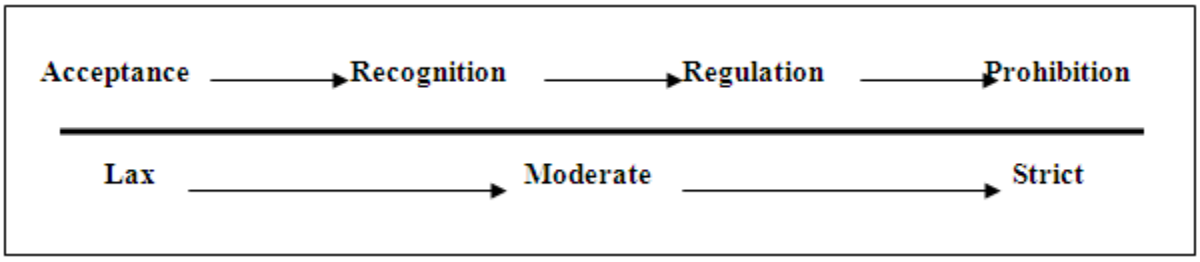
A different, but complementary way of viewing informality, is by looking at the connection between the formal and informal, and its implications. This view starts from the assumption of a semantic and philosophical difference between formal, non-formal, and informal, where non-formal would mean lack of formality. But this is not the case with informality, ie, is not necessarily a lack of formality, but more complex to understand (Fuchs & Fuchs, 2021). Focusing on the connection between formal and informal, Fuchs & Fuchs (2021) have found three forms of connections between the two: as isolated sectors, with a directional linkage, and as interconnected. The directional linkage is consistent with the view of a chaos, as the informal sector is viewed as a situation of temporary need, and an externality caused by the inefficiencies of the state, which will disappear once there is public (government) actions that tackle the bottlenecks that prevent the individuals from accessing the formal sector. The interconnected view, in its turn, is more aligned with the view of heroism, and views the two sectors as being in constant exchange (Roy, 2005).

Guha-Khasnobis et al. (2006), have shared a rich discussion on the dichotomy of formal and informal. The starting point is the fact that, a clear definition of both terms can be seen in a spectrum, guided the exact perspective of each individual at a certain moment, and raised 3 deficiencies that aggravate this unclear distinction: the misplaced dualism (which is the fact that there is no clear divide between informal and formal), the misplaced isolation (meaning the absence of investigation of the relationship of the informal sector with the rest of the economy), and the confusion (lack of clarity of the characteristics of the sector).

The complexity of informality has important implications for public governance. How governments see the informal sector, has determined the type of measures they have taken. Those policymakers that see it as a nuisance, have advocated for its elimination (as in Ghana, according to Rollason, 2012). Others view it as a sector made of vulnerable people, thus requiring assistance through social policies (Chen, 2007), even if through regulation. Still others, see it as a form of entrepreneurship which needs to be left free from government regulations (Chen, 2007). This is important for all forms of informalities, as will be discussed in the next subsection.

The spectrum of regulation of informal transportation (see figure 3) by Cervero (2000), outlines four policy options (see figure 3): acceptance (meaning, doing nothing, and experiences have proven to result in growing impacts of the externalities from the informality, although sometimes these policies can also focus on making the formal sector more cost-competitive), recognition (involving a middle-ground policy position, by allowing the market to mediate the level of market entry for new operators), regulation (that also stands as a middle-ground position, but with market entry and exit being controlled externally), and prohibition (which essentially involves banning the informal services, and to be successful, it demands strong policing and law enforcement, that is rarely possible in most developing countries).

Figure 3 – Spectrum of Public Policy Responses to Informal Public Transportation. Source Cervero (2000)



2.3.1. The Concept of Regulation

Regulation, as a concept that has proven to be multifaceted and driven by the context of the specific analysis. Despites the conflicting views around regulation, one common standpoint is that, regulations are often moulded by the dynamic nature of a society, characterised by shifting concepts of public good, and/or the changing interests of individuals or groups (Uche, 2001). According to Uche (2001), the term "regulation" suggests some form of intervention, by a regulatory authority (be it a government, a parastatal, or other bodies), to a specific activity, in various forms, that range from explicit legal control, to informal peer group control, with a common feature of stemming from failures in a market system, such as when economic activities give rise to externalities, or when information inefficiency exists. Even in cases where information is available and well understood, the regulations may take the form of paternalistic measure, as is the case if knowledge of the danger of not wearing seatbelt while driving a car exists, car users are still not given space for individual judgement/freedom, to decide whether to use or not. This is so because the neglect can imply spending of public funds, with health care assistance, and therefore, affect how money from taxpayers is spent.

Another dichotomous view of regulation looks at different strategies for ensuring compliance with such regulations. One of those views is the principle-based regulation, which stresses that, regulators, instead of focusing on prescribing the processes or actions that are at the centre of its implementation, should take a step back, and give emphasis on the intended outcomes. This is opposed to the rule-based systems, which prescribe in detail how the regulated should behave, by focusing mostly on the rules than on the reasoning (Burgemeestre et al., 2009). However, for the study, a neutral standpoint was taken with regards to these two compliance views, since, according to scholars, these tend to be followed in a combined way, although some countries may tend to be more inclined to one, than the other (Burgemeestre et al., 2009).

2.3.2. The Conceptual divide: Formalization and Regularisation

The terms formalisation and regularisation have been used, as synonymous by some scholars, or as different processes, by others, depending on the specific subject area (urban settlements, economy, etc), making drawing a line between them, a difficult task. However, a way to do so is by looking at the definition of both concepts, and find similarities and differences from three main dimensions: the focus, the implementation process, and the impact.

Zhang et al (2000), define formalisation in the context of urban transportation, as the process that entails establishing structured procedures, and standardised practices and regulations, for the transportation systems. It can include designing and implementing official policies, creating needed institutions, and/or developing the needed legal frameworks to govern transportation operations and infrastructure. The goal is to create a predictable and stable environment for both service providers and users. On the other side, regularisation is defined by Gössling (2021), as a process that tackles the adaptation and continuous adjustment of transportation practices to address evolving and emerging needs and issues. That includes modifying the existing systems and policies to align with the demand, ensure adequate service quality, or respond to evolving technology and user behaviour. Its focus is mostly on ensuring that transportation services remain responsive and effective in the face of evolving urban transportation. Based on these views, Doe (2023) established that, despites the varying concepts that both can take, the divide between formalisation and regularisation can be understood as being:

- **Focus:** While formalisation aims to create a consistent and regulated framework for transportation systems, regularisation aims to adapt and refine this framework to meet current and future needs.
- **Implementation:** Formalization often involves designing policies and regulations at the top government level, which are implemented in a top-down manner, the implementation of regularisation might be done in a more participatory and iterative manner, responding to real-time feedback, and changing conditions.
- **Impact:** While formalisation brings stability and clarity to the transportation system, that result in trust and reliability on the system by the intervenient, the flexibility and responsiveness brought by the regularisation, contribute to improved service quality and adaptation to accommodate innovations.

It is within these dividing lines, that the study is framed, and this is how the concepts will be used throughout the document.

2.4. Informality in the Transport Sector – The Emergence of Motorcycle Taxi

Like other forms of urban informalities, informal public transportation has been triggered by the increasing urbanisation movement in developing countries. The higher levels of unemployment, together with the inability of the government to make adequate public provision of transport, led mostly youth to see the informal sector as an alternative for their livelihood (Cervero, 2000). In most countries this sector was positioned as a "gap filler", ie, functioning to fill the gap left by the formal public transportation. The viability of the sector was also fuelled by the rapid motorization of the cities, and poor road facilities that constituted an obstacle for full coverage of the mobility needs by the formal transport (Cervero, 2000).

Operators of this sector are commonly youth, using small ageing vehicles, that provide low performance services, operating in specific but competitive market niches, depending which gaps are left unfilled by the formal modes of transportation; these are also operating in a labour-intensive industry, applying very low technology, with a horizontal structure across the many independent operators, and oriented towards a specific geographical area of the city. Despites the informal nature, there are common forms of organisation of the operators, be it cooperatives or route associations, that are mostly oriented towards a specific geographical area of the city, with the aim of bringing fairness in accessing revenues (Cervero, 2000).

Other important features discussed by Golub (2007), include the *laissez-faire* environment where they operate (which means limited or no law enforcement exists for the sector), operating without official endorsement, using vehicles without proper licensing, permits and/or registration, and normally run without proper insurances.

There are many forms of transport that can exist in the informal sector, including the motorcycle taxi, or simply "moto-taxi". Thakur et al (2020), have defined moto-taxi (or bike taxis, as they call them) as a motorcycle taxi that usually carries one passenger, normally behind the driver. The specific success of this form of transportation compared to other forms of informal/formal transportation is the fact that these can run through the congested traffic more easily, and can access areas of the cities that can only be accessed by pedestrians; they are relatively faster than other modes of transportation, charge relatively lower fares compared to individualised car taxi,

operate in flexible routes and stations, and operate on a more flexible time in the day, when other transports are not operating (Tuan & Mateo-Babiano, 2013).

2.5. Barriers for Informal Sector to Become Formal

Apologists of the directional linkage between formal and informal sector, believe that with time, governments would resolve the root causes of informality, and the informal sector would be absorbed into the formal sector (Fuchs & Fuchs, 2021). However, for many reasons, this is not happening as expected and the informal sector continues to grow and operate as informal, and therefore, understanding the barriers (or motivation to continue informal), is important from a policy-making perspective. According to ILO (2021), the main barriers may include:

1) Cost for registration/formalisation that are not always affordable for the informal sector operators.
2) Complex processes for formalisation of the business that is not mastered by the informal operators, such as online registration requirements.
3) Insufficient benefits (or at least lack of clarity on the benefits) for becoming formal.
4) Lack of knowledge about the very complex processes and requirements for formalisation/registration.
5) Lack of trust on the agencies to which they have to report once they become formal.
6) Lack of mechanisms to be heard when public policies are being developed, and this leads to inadequacy/inefficacy of existing/developed government policies, regulations, and strategies.
7) The existing tax regime in the countries, which do not require a certain volume of business to be registered. If combined with other advantages of continuing informal, there will be no motivation for formalisation/registration.
8) Lack of capacity on the government's side to communicate and hear the concerns from the informal sector. This can also take the form of lack of adequate infrastructure by the government to respond to the number of informal operators and to a potential demand for formalisation.

Unless these barriers are removed, the informal sector will continue to flourish and work as informal. On the other hand, there are concerning facts that should be considered, by looking at some of the advantages of the formal sector that are not present in the informal. Gajigo &

Hallward-Driemeier (2012) recognize that formalisation should not be a goal, but it has some added advantages over the informal sector from the public provision perspective, such as sustainable employment, social protection of the operators, and access to credit/capital.

Giugale & El-Diwany (1997) bring a theoretical perspective of barriers to formalisation, which states size-sensitivity as an underlying factor driving the decision for informal activities to remain informal and small, i.e., they analyse the regulations and economies of scale, as factors that influence the decision to formalise or not. They see "smallness" as a factor of equilibrium for small firms, in the face of a clear trade-off between the costs associated with regulations, and the potential reductions of costs associated with economies of scale and being formal. This is the **partial equilibrium model**. This has important implications for the prevalence of the informal sector, and to the roadmap to formalisation, or even to regulating a specific sector.

This whole discussion raises the following question: considering the prevailing factors that lead to maintain informal operators in the informal sector, and considering the fallacy associated with the directional view of formal and informal, as defended by Fuchs & Fuchs (2021), how can governments address the concerns associated with the informality, while they continue in the informal sector?

2.6. Important Considerations – Risks associated with the activity

The emergence of the informal transport solutions in developing countries, with the aim to promote and facilitate urban mobility, has contributed to filling a concrete gap, while promoting entrepreneurship and employment. Nevertheless, there are challenges that need to be brought into the defined equations of informal sector, as solutions to the problem of urban transportation, assuming the safety of the citizens as key in the public governance agenda. The 2030 Agenda for Sustainable Development has defined, in target 11.2 "*access to safe, affordable, accessible and sustainable transport systems*" (Premti, 2017: 14) as one important consideration for signatory governments. It is in the scope of this target that countries develop internal policies and strategies to provide citizens with a safe transport system. In Mozambique, the National Policy for Road Safety, created through Decree 68/2020 on December 31st, has been developed as a reflection of government concern with road safety, to reduce road accidents and their consequences, with major focus on reducing deaths and serious injuries.

In light of this goal, it is important to reflect on these challenges in a context of a rapidly growing informal transport sector. In the specific case of moto-taxi, there is a set of concerning aspects that have been listed in various countries as elements that need to be addressed for the benefit of the involved actors, and these are structured under two main categories: safety and criminal.

a) Safety Concerns

The World Health Organisation (WHO) has estimated motorcyclists as accounting for 54% of the road traffic deaths, mainly due to their large numbers on the roads, where these share the space with bigger vehicles, such as cars and buses (Rappler, 2020). This concern is aggravated by the fact that moto-taxi drivers rarely have an insurance (Starkey, 2016), and it is common that they do not respect the traffic legislation (Akinlade & Brieger, 2004): do not wear helmet, exceed the speed limits, do not stop at the road junctions, exceed the limits of number of passengers, do not make appropriate turn signals, drive after alcohol consumption, do not wear protective clothes, among other. And this goes beyond affecting only the operators, and frequently also cause injuries on the users[4] (AfCAP, 2020).

It is also acknowledged that the informality nature of the moto-taxi, is commonly characterised by very limited training in traffic law among the operators (Starkey, 2016). But this gap can vary by context and specific groups of operators. Akinlade & Brieger (2004) has found that gaps in knowledge of traffic legislation is higher among younger operators, and that those who have shown better knowledge of this legislation have been exposed to relatively lower levels of road accidents.

b) Criminal Concerns

Criminal concerns have also been associated with the moto-taxi activity, either perpetrated by the moto-taxi drivers, or victimising them. Da Silva et al (2011) also state that, as the moto-taxi drivers are individuals fighting for their survival/subsistence (sometimes at all costs and means), it often takes them to involve in transporting illegal drugs across the community. Another report of such criminal activities comes on the Ikweli Newspaper (2022), which is also supported by Cobrissua (2021), that mention perpetration of thefts and rapes by moto-taxi drivers. On the other side, other reports of criminal activities have motorcycle drivers as victims, such as assault, having their

[4] AfCAP (2020) report presents a result from the study in Democratic Republic of Congo (DRC), where 79% of those moto-taxi operators who reported having an accident, were carrying a passenger when the accident occurred.

motorcycles stollen, and/or being murdered, especially given the wider reach they have (going to very remote areas), since they cover areas hard to reach by other forms of transport (Miramar, 2023), and also due to the working hours, as they work at late times of the day (Da Silva et al, 2011).

c) Other Important Concerns

Cervero (2000) adds traffic congestion (due to the excessive supply of transport, given the absence of restrictions to market entry), disorderly operations and unfair practices (characterised by fierce competition for customers, that opens ground for chaotic and collectively damaging driving behaviour), air pollution and environmental problems (also including noise, given the age of vehicles normally used in this sector, diesel propulsion, absence of catalytic converters, among other), and cream-skimming (which is the tendency of operating in more profitable routes, thus not adequately responding to the demand in those considered less lucrative).

2.7. Features Involved in Regulating Informal Transport

The discussion so far has looked at informalities from various angles, highlighting how it is playing an important role, especially in the developing world, in filling gaps in public provision by governments. It has also covered some facts that constitute barriers for the informal sector to enter the formal sector. And finally, it covered some concerns that need to be tackled by governments, that come along with informalities. After all this, the reality is that the informal sector "came to stay" and we must only "learn to live with it". So what? What have governments in developing countries done with the informal sector? As Chen (2012) stated, the informal sector needs to be valued for their contribution and integrated into the planning and legal frameworks.

In most countries dealing with the informal transport sector has demanded some form of organisation of the sector, in forms of associations or cooperatives (Cervero, 2000). These work as a form of internal/self-regulation mechanism, and serve numerous benefits recognized by governments such as helping enforce regulations, maintain a clear registration process of the operators, facilitating communications between government and operators; while on the operators/owner's side, the advantages of such forms of organisations have been associated with

social support among members, personal security, access to credits, and facilitating contacts with government (Bishop et al., 2019).

In addition, countries have adopted measures on the regulatory side, for better performance of the informal sector. As Cervero & Golub (2007) shared, in this specific area, the policy options have been of prohibition, acceptance, recognition or regulation. Those policy options come with specific norms and policies, which are not developed in a vacuum; they are guided by existing and applicable global, continental, and regional policies to which the country is signatory.

Those policies include the UN Policies designed in line with the Strategic Development Goals (SDG), and continental framework for transportation. The white paper on the Transport Policy Framework for the African Union (AU) by Shelley & Chatelin (2016) discusses the challenges and policy recommendations for the countries on the adequate policies for the transport sector in the continent. Among the challenges for the urban transport, the White Paper highlights some important aspects related to informal motorcycle transportation mode, as countries reflect on their policy options:

1) How best to handle very rapidly increasing urban travel needs and develop urban institutions to meet these needs.
2) How to combine structural solutions for the longer-term with immediate solutions for the transport demand of today, including the need for equity and access for the poor and disabled.
3) How to increase capacity by developing and efficiently modernising the urban public transport supply, with reductions in operating costs and fares.
4) How to ensure complementarity between the paratransit[5] and conventional bus modes.
5) How to ensure that paratransit evolves to become more professional and integrated.
6) How to develop appropriate urban transport solutions for individual African cities, applying common principles favouring sustainable urban transport.
7) For the larger conurbations, how best to cater for daily movements that cross urban boundaries, and

[5] Defined by the AU White Paper as the "public transport unscheduled services, supplied by private operators without standard accountability, running small to medium capacity vehicles" (Shelley & Chatelin, 2016)

8) How to reduce individual travel modes that are the main Greenhouse Gas (GHG) contributors and to increase public transport vehicle performance (engine specifications, fuel used fuel, maintenance effort, and maximisation of occupancy rates).

These challenges are analysed and raised in line with the strategic objectives of the Policy Framework, that include, among other: (1) "Foster safe, and secure means of transport that protects both goods and the lives and livelihoods of people", and (2)" Improve the overall governance of the sector, by developing and implementing efficient regulations allowing fair competition within and between transport modes, eliminating abnormal practices and overloading and ensuring efficient transport infrastructure maintenance systems". In addition, it is also in line with the Sustainable Development Goal (SDG) Target 11.2, that set that "by 2030 provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety notably by expanding public transport with special attention to the needs of those in vulnerable situation, women, and children, persons with disabilities and older persons" (Shelley & Chatelin, 2016: 35). Based on these, the scholars have indicated various policy recommendations, that include the following, applicable to moto-taxi (or paratransit) sector (Shelley & Chatelin, 2016: 19):

1) "*Identify adequate and sustainable sources of financing for urban public transport development.*
2) *Fare policy should permit cost recovery from operators, even if concessionaire fares are also necessary.*
3) *Consider a range of potential public transport funding sources: fuel taxes, vehicle registration taxes, taxi and minibus licence fees, royalty fees from contracted operators, Parking fees and urban tolls, contributions from employers and commercial activities, land value capture.*
4) *Work with the paratransit sector to evolve towards more organised and integrated systems.*
5) *Create and train specialised urban police units for urban traffic and urban transport.*"

Cervero (2000) also shares some common aspects that are covered by regulatory strategies and policies, which are widely considered when tackling the informal urban transport sector. These include:

1) *Setting Criteria for Market Entry*: this sets a minimum criterion for new entrants to possess before being authorised to enter the sector.

2) *Pricing rules*: by setting fare rates or procedures for setting/revising the fare rates, with the view to promote some forms of cost-recovery, equity, clarity, and ease of administration.
3) *Service Characteristics*: which sets limits such as number of passengers per vehicle.
4) *Requirements of liability insurance coverage:* which aim to protect the driver, the passenger from injuries, as well as protect third party users of roads from material damage caused in an accident.
5) *Fitness standards:* such as setting the minimum vehicle age, minimum age of the driver, maximum permissible number of accidents before licence is banned, etc.

Special considerations are raised by Guha-Khasnobis (2006), as recommendations for design and implementation of regulations for an informal sector. First and foremost, is what they called *subsidiarity in a multi-level system*, which essentially means that placing the intervention/regulation, as close as possible to the subjects it targets (either in terms of government level or geographically). Secondly, strike a balance between formal interventions and informal practices, in the belief that formal interventions will be more effective if not designed to replace the informal rules, but rather, fine-tune them. Thirdly, the interventions should be consistent, not only with the implementation capacity by the implementing body, but also with the absorption capacity of the people it is meant to help, in what they call *implementation capacity*. Fourth, the intervention should be delivered as a package, with other complementary interventions that need to support the core intervention. Fifthly, implementers of regulatory interventions should use *voting with their feet* as criteria for evaluation of the regulation, as the number of people moving out of the net of the intervention may signal the inefficacy of the regulation in contributing for their well-being.

2.8. The Regularisation as the basic Conceptual Framework of this Study

The study is grounded on the conceptual framework of **regularisation** of informality, and the related theories, focusing specifically on informal urban public transport/transit, with the Cervero (2000) being among the most prominent scholars framing discussions on urban informal transport through those lenses. The basic elements of the framework are:

a) Regulatory Reforms

Regularising the informal transport sector in urban areas encompasses developing/adapting regulations to set standards on different matters pertaining operations within the sector, including market entry rules, insurance coverage requirements, operating practices among actors, pricing rules and policies, operator qualifications, and rules on vehicle fitness. According to Cervero (2000), the regulatory reforms are two-folded. On the positive side, these sets of rules and regulations can play a role in ensuring safety, as well as playing a role of protecting the operators from whims and harassment from law enforcement agents, who may start making their own rules, in the absence of specific and objective regulations. Secondly, control measures, such as market entry rules, can allow fair return on investment by eliminating over-competition. And, most importantly, vehicle registration can help reduce vehicle theft. On the negative side, Cervero (2000) acknowledges that these regulations could hinder operations and "disappearance" of informal transport operators, while also affecting mobility and employment, and therefore, recommends the regulations to be adjusted to the reality in each location.

It is also within the regulatory reforms that Cervero (2000) brought in the concept of the "Spectrum of Regulatory options" (Cervero, 2000:165), discussed earlier. By that, he stresses that policymakers should establish their standpoint when implementing policy reforms, and adopt one of the four policy options: acceptance, recognition, regulation, and prohibition.

In addition, according to the political economy of urban transport viewpoint, government policies affect the dynamics of the public transport industry. The established regulatory frameworks, the decisions and policies around the existing, possible, and viable funding sources and mechanisms, the service priorities, and other decisions, influence how the transport sector functions in a specific geographic location, while also influencing the functioning of the economy as a whole (ITF, 2021). policymakers should also make complex decisions regarding who provides the services, and whether privatisation is a viable pathway, given its implications and impact on the overall goal of public provision of transport services and social welfare in its various dimensions. Using some known examples, Haas (2022), has shown how privatisation decisions on public bus services in urban areas in some developing countries, have impacted on social welfare, by reducing the intensity of work, incomes, social benefits, and quantity of employment. The consequences of the privatisation need special consideration by policymakers, for a feasibility analysis.

b) Management and Organisational Options

Regularisation, according to the framework, demands some forms of sector organisation, by establishing a structure under which the actors in the informal sector operate. Most scholars stress that, in the informal transport sector, the most effective form of organisation, is through route associations, that are self-initiated entities among the operators, primarily aiming to establish grassroots structures for identification and coping with various challenges facing the industry, and establishing mechanisms for self-regulation and/or self-policing, as means by which efficiency and safety can be achieved in the informal sector (Cervero, 2000), but also as a means to achieve self-protection of the operators (Rodrigues and Bialoborska, 2017). In such countries, to leverage their initiative, the self-organised operators engaged important political actors, to seek for support, and made it through their formalisation, as an organisation. In addition to the interest of voicing the concerns of the members, these have also been created with the expectation of facilitating access to credit, introducing insurance policies, awareness raising among the members on road safety, raising awareness on the importance of licensing, etc. As a self-initiated structure, these require little or no government hand for their functioning, and tend to be more effective in ensuring respect for the rules and regulations, than external enforcement forces (such as police).

This standpoint is common, not only with regularising informal transport, but also other forms of informality, be it informal settlements, or other forms of informal economy, that have shown to be more successful when involving the creation of some form of organisation or representation of the informal operators. Rodrigues and Bialoborska (2017), share the view of the need for a representation of the informal operators, as a critical step in the process of regularisation, and indicate two additional pathways (besides the self-created), that are common in creating these forms of organisation of the informal sector. State-created organisations, and the development of international networks, within the informal economy.

An example of the first type, which is also called top-down establishment, are trade unions, mainly inspired by the socialist model. Despites the emergence of new forms of organisations, these still exist, to represent the labour in various industries (Rodrigues and Bialoborska, 2017).

c) Financial Incentives

Tackling the informal sector could also involve some forms of financial incentives (Cervero, 2000). These can be in the form of measures to improve access to credit, which will assist the operator to accumulate capital, or in the form of other financial incentives, such as tax break (for instance, when importing vehicles), fee exemptions, etc, that could improve efficiency by stimulating free enterprise transport in a more productive way.

Financing considerations have also been part of a broader discourse of political economy of informal urban public transport, and beyond the mere provision of financial incentives. Financing decision have to do with, firstly, the allocation of the scarce public resources, as adopted policies represents a constant trade-off among various investment options (for instance, a choice between investing in railway transport, will divert funding that could otherwise be used on buses); secondly, funding options, for instance through taxes and fees (Brueckner & Selod, 2006), or public-private partnerships (Small & Verhoef, 2007); and thirdly, issues around pricing for urban transport and decisions on subsidies, which will affect the just access to the transport services by the different facets of the society (Borck, 2006), as also stressed by Cervero (2000).

The political economy discussion goes further, bringing the perspective of social equity, which is also another area of special attention when policies on urban transportation are made. Garrett and Taylor (1999) looked at this dimension of analysis as a struggle to find a balance across multiple facets of the society, in terms of income level, membership to minority groups, and in terms of geographical location (inner or outer parts of the urban centres).According to these scholars, policy decisions have different impacts on transport use by those different groups, translated in the form of trade-off of benefits from one group to another, or by producing externalities. As an example, an investment in a private transport system diverts benefits from those who cannot afford private transport and continue to rely on public transportation modes. In addition, more investment in private transport systems could create negative impacts on the environment, as more private cars could lead to increased air pollution, and the consequences of such externalities are equally shared with those minority groups (or as they call them, traffic dependents). The consideration of exogenous and endogenous factors, that contribute to a socially inequitable provision of public transit, is a balance that needs to be struck, when policy decisions around transportation systems are made.

d) Infrastructure Improvements

These are a set of measures that can improve the provision of informal transport services, and can take one of two forms: off-street improvements, and on-street improvements. The former could include interventions such as construction of terminals for the transport, while the former could take the form of provision of specific lanes on the main road, for those targeted operators, which are critical in contexts of high vulnerability to accidents (Cervero, 2000). This position is seconded by Holve (2022), who sees the adaptation of transport infrastructure, as a need to allow accessibility to transport services by the vulnerable population groups, which can be achieved through establishment of priority lanes for a variety of modes of transport, in a multi-modal transport system.

e) Traffic Management

These measures entail establishing policies and strategies to help manage traffic flow, such as establishing time periods when trucks can circulate, establishing specific zones of the road that certain types of vehicles can use, and like-strategies. More important than designing these policies, is ensuring the proper reinforcement of its implementation, based on the existing resources (including the involvement of members of the existing route associations in policing).

f) Training

This is a set of interventions at the level of education to the actors, in various relevant matters, such as traffic rules, safe driving practices, vehicle maintenance, which the informal sector might be lacking, especially in a context of poor literacy among the actors in the sector, as this will become strong barrier to understanding the rules and regulations pertaining licensing, registration, and operating practices (Cervero, 2000). Other trainings can also include policing, customer relations, but also on use of important enforcement equipment, where these are found needed.

g) Environmental Sustainability

Sustainability of the transport system, as a dimension for policy decision, touches on the extent to which the system ensures intergenerational equity for people and ensures environmental sustainability (Haas, 2022). This touches on ensuring that the adopted transport policies, consider

environmental standards, such as emission standards, air pollution, GHG emissions, and thus forth. The choice of one form of public transport should always be made with clear consideration of implications those would have on the environment and future generations. Cervero (2000), corroborates with this view, and indicates to be an important consideration on the policy reforms, through setting fitness standards, especially in terms of age of the vehicles and standards of emission of GHG.

Conclusion

As presented thus far, there is a wealthy literature around informal economy, and informal transportation modes. These share important perspectives from which informality is approached, and also look at the importance those aspects have from a policy and governance point of view.

Firstly, to analyse how policy-related processes pertaining informal phenomena have been shaped, requires understanding of the standpoint of the legislator, i.e., whether this is viewed as a contribution to fill a gap in public provision (and thus supported), or as crisis to be absorbed by the formal sector or combated; whether viewed as a temporary phenomenon, or as a sector coexisting with the formal sector. Secondly, there are concerning factors involved in informal transportation services that may pose risks, either to the operators or to the users of the services, that need to be understood, acknowledged, and used to define actions that aim for ensuring safety of the involved actors, as a goal in governance. Thirdly, the literature also verses on different actions that may be taken by governments with regards to the informality, which may include prohibition, acceptance, recognition, or regulation, and this needs to be clarified, along with understanding actual measures already taken, from a policy perspective. Lastly, political economy considerations are important in policy decisions.

Thus, this section brings light to various debates, and may fill in some knowledge gaps, which were taken to frame the research in Nacala-Porto, and respond to the defined research question.

CHAPTER 3: RESEARCH METHODOLOGY AND DATA COLLECTION

This section highlights the methodological underpinnings that shaped and guided the research. It describes the research approach followed and the design that shaped the research. At the same time, it describes the various tools used for data collection for the study, the sampling approach, and the process of data analysis. Other aspects covered include the limitations, feasibility and positionality pertaining to the study, ethical considerations, and the critical aspects of validity, reliability, and dependability of the study.

3.1. Research Approach

Research approach, according to Grover (2015), refers to the plans and procedures for research, including the steps, from the assumptions to more specific methods that are used for data collection, analysis, and interpretation. In general, the approaches are divided into quantitative, qualitative, and mixed methods. For the purpose and questions defined for this research the qualitative approach was adopted. This is guided by a constructivist ontology and interpretive epistemology. The area under investigation, despites the rich literature worldwide, has very limited local information, and this required that knowledge be constructed based on the beliefs of the local players, with focus on the key research questions. Thus, the study intended to build on how people interpret reality, based on their experiences, which shapes their views.

3.2. Research Design

The study was exploratory since the case of Nacala-Porto has not been widely investigated. Information on the moto-taxi activity was also not publicly available, requiring direct contact with the municipal government to learn what information exists, and access additional relevant documentation. According to Islamia (2016), exploratory research is one with the aim of achieving new insights into a phenomenon, with the purpose of formulating a problem, to orient future deeper investigation. The goal of the exploratory research is not to provide the final and conclusive answers to the research questions, but to explore the topic and raise aspects that may lead to further investigation.

3.3. Data Collection Methods

For the study, multiple data collection methods were used. According to Taherdoost (2021), data collection is a process intending to collect data to provide insights into a research topic. For the

purposes of the qualitative study intended on the research topic, the following data collection methods were used:

1) **Document Analysis**: this is a method that involves reviewing written materials/documents, such as archives, annual reports, guidelines, policy documents, diaries, letters, and other relevant documents (Busetto et al., 2020). For purposes of this study, relevant documentation included policies for the transport sector, applicable to the municipality and the country. The review covered the Mozambican code of road traffic, the Municipal Stance on Public Roads, Transport and Urban Traffic, and the country Road Safety Policy and Strategy (PESR). An important note, there was no information published around moto-taxi activity in Nacala-Porto, as is the case of most norms and regulations issued by that municipality (UN-HABITAT, 2010), therefore, relegating this access for the moment of the interview with the municipality.
2) **Semi-Structured Interviews:** these involved a set of open-ended questions, guided towards the research question/topic, and allowed collecting attitudinal information, and were used to gain insights on the individual's opinions, motivations, beliefs, and experiences (Busetto et al., 2020). These were conducted with:
    - Director of Transport at the Municipality of Nacala-Porto,
    - President of Association of Moto-Taxi Drivers of Nacala-Porto (AMONAC),
    - A sample of moto-taxi drivers, and
    - Sample of moto-taxi users
3) **Non-Participant Observation**: this was done after the interviews with drivers and users were undertaken. The main purpose was to gain insights into certain settings and behaviours, but without being part of the situation, and trying to not influence the setting by his/her presence (Busetto et al., 2020). For purposes of this study the observation was aimed to gain insights on how motorcyclists drive in Nacala-Porto, and the extent to which the motorcycles comply with the requirements from the municipal Stance. The observation was done in two consecutive days, from 7.00pm to 8.00 pm as a time of considerable traffic and allowing to observe aspects that could not be observed during the day, such as the possession and use of lighting systems.

3.4. Research Tools and their Application

The interviews were conducted following a semi-structured list of questions. This is a form of guide characterised by open-ended questions and the use of an interview guide (or topic guide/list) in which the broad areas of interest, sometimes including sub-questions, are defined (Busetto et al, 2020). The questions were guided by the findings from the document analysis, as well as the common themes in literature review, and were organised based on the combination of the recommendation for regulating motorcycle taxis by Cervero (2000), and national, continental, and global policies for the sector. For simplicity, the themes were organised based on the framework suggested by Thakur et al (2020), as the recommended focus of regulations, as well as based on the informal moto-taxi drivers organisation recommended by Cervero (2000).

Nacala-Porto (and Mozambique, as a whole), have Portuguese as the national official language. Thus, the conversations were held in Portuguese, which are very commonly spoken in urban areas of Mozambique, including Nacala-Porto. This required the interview guides to be translated into English. The translation was done by the researcher, using google translate, and revised to ensure the intended meaning is not altered.

3.5. Sampling

5.3.3. Sampling Strategy

The sampling of moto-taxi drivers for this study was purposive, and not following any form of randomised sampling processes. Purposive sampling is defined as a sampling approach that selects the participants of the study in a deliberate manner, based on the qualities the participant possesses, or, in other words, the researcher the aspects to investigate, and based on that, selects people who can and are willing to provide the information based on their knowledge or experience" (Etikan, 2016). For the study, the researcher purposely selected moto-taxi drivers only for being players of this sector, the Director of Transport of the Municipality, and the president of the moto-taxi association of Nacala-Porto. For the specific case of users of moto-taxi, the sampling followed a convenience approach which is a sampling approach where selection is based on the fact that the person meets certain practical criteria, such as easy accessibility (Etikan, 2016). To assess the eligibility of the moto-taxi users, a question was asked on whether they regularly use moto-taxi for their mobility. Those who responded "yes", were then asked for their willingness to participate in the study.

3.5.2. Sample Size

In total the study involved data collection from 10 semi-structured interviews with moto-taxi users, 10 with users of moto-taxi, 1 semi-structured interview with the Director of Transport of the Municipality, and 1 semi-structured interview with the president of the district moto-taxi association. The qualitative nature of the study, with the aim of understanding the beliefs and knowledge of the participants, did not demand a bigger sample size.

Table 1 – Sample size of the individuals to be interviewed

Type of Participant	Unit	Number of Units
Users of Moto-taxi	Individuals	10
Moto-taxi drivers	Individuals	10
Director of Transport of the Municipality	Individuals	1
President of the Moto-taxi Association of Nacala	Individuals	1

Initially, there was some flexibility built into the study methodology, to exceed the initially defined sample size, as new information came in, i.e., if the targeted sample size did not allow saturation. However, during data collection, before the targeted sample size was reached, saturation had already been achieved, thus removing the need for additional interviews to be conducted. Regarding the number of respondents from the Municipality, targeting only the representative of the Transport Sector, was intentional, based on the research questions, that intended to collect information on the elements of the regulation of the public sector, and have access to the accompanying documentation.

3.6. Process of Analysis

Data was analysed using thematic analysis with a mostly inductive approach. Thematic analysis consists of analysing data collected from the participants, by developing themes that emerge, while the inductive approach consists of not closing the analysis on preconceived themes, but rooting it on the grounded themes that keep emerging from the discussion (Morgan, 2022). This was done without leaving aside the existing conceptual frameworks, as these were important in framing the discussion in a more structured way, using existing policies, theories, strategies, and schools of thought applicable to the sector.

3.7. Study Limitations

At the beginning, two main limitations were expected. Firstly, as a qualitative study, conducted by one individual researcher, it had to be limited to a very small sample. Secondly, the study occurred in a very sensitive political environment, marked by municipal elections, done in two rounds, which limited the availability of the Director of Transport to respond to the requests for the interview. In addition to these expected limitations, there were also limitations in interviewing female users of moto-taxis, due to cultural/religious reasons, as the population of Nacala-Porto is mostly of Muslims, and not allowed to freely speak to a male interviewer. Various people were approached to get the intended number of participants, given the level of refusal, especially among moto-taxi users.

3.8. Ethical Considerations

This study was guided following a set of ethical considerations that not only increase its credibility, but also respects the voluntary participation, the anonymity, and confidentiality of the participants.

3.8.1. Anonymity and Confidentiality

Anonymity and confidentiality were an essential part of the study. As initially expected, there were cases of refusal by participants, in participating in the study, fearing that this could have political implications. As Avis (2016: 28) has mentioned, "informality of all types is a sensitive political issue". That was even aggravated in the political context of Nacala-Porto, where the municipality is run by an opposition party. To ensure confidentiality, although conducted in a public road, near where the taxi drivers operate, each interview was conducted isolated from other persons, so that the conversation could not be heard by others. Personal Identification information was collected, but not used during the analysis, unless allowed in writing by the participants, during the consent process. All these measures were shared with the potential participants prior to the initiation of the interview, as part of the informed consent process.

3.8.2. Informed Consent

The participation in the study was entirely voluntary. The moto-taxi drivers, moto-taxi users, and the president of the moto-taxi association, were requested to sign a written consent form, which

explained the purpose of the research, the voluntary participation aspect (including the possibility of ending interview at any point), the fact that it will not affect, by any means, their activity (or use of the service) in relation to the transport sector in the municipality or any other government services, and that no monetary gains were being given in exchange of their participation. The consent process was done using a Participant Information Sheet that was given to the participants to take with them, in case they wanted to get additional information about the study. It contained the contact number of the researcher and supervisor, in case the participant would want to make any further question. Finally, the consent clarified the aspects of confidentiality of their responses, and anonymity during the analysis (including when making quotes of what they say).

3.9. Validity and Reliability

3.9.1. Validity

According to Brink (1993), validity, in qualitative research is defined as the level of accuracy and truthfulness of scientific findings, and in qualitative research these can be divided in two categories: internal validity (the extent to which research findings are an accurate representation of the reality) and external validity (the extent to which the representations or reflections of the reality can be applicable across groups). To confer internal validity for this study, the report was shared with the municipality to validate the findings, as well as was discussed with a group of 7 moto-taxi drivers to validate the report. In addition, the researcher shared most significant quotes of responses given by the respondents, for them to confirm those are accurate representations of what they think. During the interviews, anonymized statements from prior participants were shared, so that the respondents agreed or disagreed with those, and if not, clarifying what their position is.

On the other hand, since the study was qualitative, it is only applicable to the Nacala-Porto Municipality, and any site with a similar characteristic of Nacala-Porto. This is a municipality in Mozambique (a developing country), and a secondary city, with a municipal management, that, despites the decentralised management, is guided by central government policies and strategies. In addition, Nacala-Porto is an urban area, without much traffic congestion, which includes a varied number of modes of road transportation at the disposal of the population. Therefore, the study will be applicable only to a similar site.

3.9.2. Reliability

According to Brink (1993), reliability has to do with consistency of the findings, its stability, and repeatability if the study was conducted by another researcher. To provide reliability to this study, the process of data collection is provided in detail in this research report, together with the description of how the analysis was done. Any uncommon facts are also presented. Finally, a detailed transcription of the data is provided in case the research needs to be repeated.

CHAPTER 4: PRESENTATION OF RESEARCH RESULTS

This section presents the data collected by the researcher, to respond to the basic research question, and following the approved research methodology, as highlighted in section 3. The section presents basic analysis of the results, by combining the responses from various participants, in a way that identifies commonalities on the responses, as well as divergences, which are further discussed, to understand the possible reasoning. Three main categories of respondents were interviewed: (i) the municipality authorities, whose main objective is to regulate informalities and ensure access to public services by the citizens, (ii) the moto-taxi drivers, whose main concerns gravitate around generating income for their livelihood, and (iii) the moto-taxi users, whose interests are guided by the goal of value for the money invested; the diverging interests may influence the standpoints and responses. Thus, the section will focus on triangulating the findings from each of these three participant categories, and identify common themes that will underpin the conclusions.

The section begins with a description of the profile of the respondents and follows with a presentation of findings from each of the categories of respondents, organised by relevant categories (themes), that made sense based on the collected data.

4.1. Profile of the Respondents

The study was conducted on a total of 22 respondents, as follows:

i. 10 moto-taxi drivers
ii. 10 moto-taxi users
iii. 1 representatives of moto-taxi drivers
iv. 1 Director of Transport at the Municipality of Nacala-Porto

All the interviewed moto-taxi operators were males, operating in a total of 07 moto-taxi stops (ranks) scattered across the entire city of Nacala-Porto. The age of the respondents ranged from 26 years to 52 years, being the latter, an outlier, as most of the respondents ranged from 26 years to 29 years of age. With regards to the time of performance as moto-taxi driver, it ranged from 1 month to 7 years, as dedicated moto-taxi drivers. All the respondents were dedicated taxi drivers, meaning that they were full-time drivers, as the opportunistic drivers (those that did it in their free times or if opportunity arose), did not accept to be interviewed.

Four of the respondents owned the motorcycles, while the other six were operating as employees of the owners of the motorcycles, in exchange of a salary and a daily income, agreed with the owners.

4.2. Regulatory Reforms

Under the regulatory reforms, various perspectives were explored, including the standpoint of the municipality on the Spectrum of Policy Options (Cervero, 2000), the factors influencing the advent and growth of the moto-taxi in Nacala-Porto, the major concerns, to then explore the main policy reforms introduced in response to the specific nature of the activity in the municipality.

4.2.1. Standpoint of the Municipality on the Spectrum of Policy Options

The municipality recognizes the deficit of the mass public transportation vehicles, compared to the demand of the citizens in the municipality. The few existing commuting buses do not cover the demand, and have limited geographical coverage, as access roads to some areas of the municipality are precarious and not easily accessible. While recognizing this important role of the moto-taxi to fill that existing gap, the sector continues to be a two-sided coin: It is a blessing, in the sense that it is helping resolve a dramatic problem that would barely be resolved under the current resource constraints facing the municipality, with considerable shortage of budget for provision of public goods/services; and, as a curse as there are various issues associated to the sector. The number of accidents involving moto-taxi drivers, the neglect by these operators in using prescribed personal protective equipment, and the difficulty by the municipal authorities in ensuring compliance with all the safety regulations, are among major concerns of the sector. According to the Director of Transport, this is very dramatic, to the extent that, if options of more safe public transports were available, the municipal government would opt for banning moto-taxis.

According to the Director of Transport, alternatives to minimise the problems associated with activity are currently being analysed. However, there are facts that exacerbate the problem. Human behaviour for not following the rules, disconnect between the department of transport and the municipal police within the municipal government, and disconnect between municipal government as a whole and the police of the republic (which is not related to the municipality), are among the main facts. These are hindering the success of the sector and raising reflections on whether this should be banned or improved. Improvements under consideration are the use of a different type of vehicle, by incentivizing the use of 3-wheeler vehicles, widely known as “Tuk Tuk” (see figure

4). These do not require a helmet, carry more than 1 passenger at a time as per manufacturer descriptions, and may protect passengers from rain or direct exposure to sun.

Figure 4 - Illustration of a 3-wheeler Tuk Tuk



As per municipality experience, there have been *Tuk Tuks* operating in Nacala-Porto, but the viability was compromised by the cost of its acquisition. It costs more than 150,000 MT (ZAR 41,551.25) compared to around 37,000 MT (ZAR 10,249.31) of a 2-wheeler motorcycle. Therefore, these did not have competitive fares as compared to the 2-wheeler; and third, these would not outweigh the advantage of access to hard-to-reach areas by the two-wheeler motorcycles. Nevertheless, these continue under the consideration of the municipal government.

4.2.2. Factors Behind the Rapid Growth of the Sector in Nacala-Porto

According to the municipal government, Nacala-Porto observed an increase in incomes in the past 20 to 30 years, with the growth of the local port, and the establishment of the special economic zone (ZEE). Combined with the emergence of a market of affordable motorcycles from Asia, this increase in income translated into increase in possession of motorcycles for a considerable number of households. This is in line with the concept of rapid motorization view by Cervero (2000), seen as a trigger for the rapid growth of the moto-taxi in most developing countries.

In a context of limited supply of public transport, increasing demand for transportation service due to increase in urban population, and considerable youth unemployment, the citizens saw a concrete opportunity to resolve some of those issues, by using the already existing (and/or affordable) motorcycles, and therefore the sector emerged and continued to grow. In addition, the low fares, flexible schedules, accessibility to remote areas (accessibility to users' houses), the apparent lack of excessive bureaucracy to enter the sector (compared to other forms of public transportation), and the convenience associated with the possibility of calling the moto-taxi to the user's address, led to the continued growth of the sector in Nacala-Porto, as mentioned by many users, as follows:

> "*Eu posso ligar ao táxi mota, para vir me buscar à minha casa, e não preciso caminhar e transpirar até à paragem de chapa. Segundo, o táxi-mota me deixa no meu local de*

trabalho, e isso permite que eu não amarrote a minha roupa." [I can just call the moto-taxi to come and pick me up at my house, and I don't need to walk and sweat to get to a bus stop. Secondly, the taxi drops me at my office, allowing me to keep my outfit neat] (Moto-taxi user)

"Eu geralmente uso moto-táxi quando estou com pressa para chegar ao meu destino. De contrário, vou de chapa-100" [I usually take the moto-taxi when I am in a hurry. Otherwise, I take the commuter buses]. (Moto-taxi user)

Today, there are tens of ranks of moto-taxis distributed across the entire city, and in the absence of entry barriers or control, new operators enter the sector every day, as testified by all the moto-taxi drivers, who added that, due to lack of employment opportunities (or the inability to progress with their education), combined with the possession of a motorcycle at their household, youth have seen this as a viable alternative.

4.2.2.1. Reasons for Being in the Sector – The supply perspective

Consistent with existing literature around paratransit/moto-taxis in developing countries, all the respondents reported lack of formal employment, as their main reason for being a moto-taxi driver. While some have never gotten an employment, others lost their jobs, or decided to look for alternative occupation, that appeared to be more profitable, as highlighted by one of the respondents:

"*Eu tinha emprego numa loja de comércio de um indiano. Mas o salário não era suficiente para minhas despesas, e às vezes era pago atrasado. Por isso comprei uma motorizada, e comecei com esta actividade de táxi-mota". [I had a full-time job in a trading shop, but the salary was very low, and delayed most of the times. Therefore, I bought my motorcycle and initiated the moto-taxi activity]* (Taxi Driver)

The absence of employment alternatives, and the seeking for more viable sources of income, have also been confirmed by the municipality, as the main reason for engaging in the moto-taxi activity by most youth.

Ownership of the motorcycles by the moto-taxi drivers was a mixed situation. While some were owners of the motorcycles, others were working as an employment, under a precarious contract with the owners of a motorcycle (be it a stranger or a relative). These contracts only include a

salary at the end of the month, in return for a daily income the contractors need to bring to their employers. Essential elements present in other forms of employment did not exist, including insurance policies (health and accident insurance), nor a contract that is regulated by the labour law.

4.2.2.2. Preference of the Users – The demand perspective

There is a consensus on factors behind the preference of users of moto-taxi on this form of public transportation. It was clear that moto-taxi is relatively more expensive than mass transportation [minimum fares are MZN 20.00 (ZAR 5.54) for moto-taxi, compared to MZN 10.00 (ZAR 2.77) for commuter buses], yet continuing to be the most preferred mode of transportation, in some circumstances. The most mentioned reasons for preference for moto-taxi over the commuter buses, include:

1) ***Time to get to destination*** – unlike the buses, which have multiple stops before getting to one's destination, the moto-taxi do not have any stops (except if requested by the passenger), which makes it faster in reaching the destination.
2) ***Ease navigating on poor quality roads*** – mass transportation means have difficulty navigating in some roads affected by erosion or that have considerable potholes, where only moto-taxis can easily navigate.
3) ***Access to remote areas*** – users can have the driver picking them up at their homes, which does not happen with the commuting buses.
4) ***Cleanness of the user*** – since a single client is carried at a time (general rule), users can reach their destination, while maintaining their outfit clean and organised, which is harder to maintain in the case of commuting.
5) ***More flexible operating hours*** – commuter buses have established times of the day to operate. When they stop, the only option available are the moto-taxis.

For those instances when commuting buses are preferred, the main reasons for the preference include:

1) ***Safety*** – since commuter buses are better monitored by law enforcement agents (who require minimum standards of the vehicles, legal permits, insurance, and driving licences), the users perceive it as safer than the moto-taxi.

2) ***Lower and fairer fares*** – for the most financially sensitive citizens, commuting is much cheaper and affordable than the moto-taxi.

4.2.3. Existing Market Niches for the Moto-Taxis

Moto-taxis perform two types of transportation in Nacala-Porto. These are cargo transportation and passenger transportation. The cargo transportation consists mainly of transporting various types of cargo on demand by their clients, in return of a fare. Operators have reported transporting meals from catering service providers and delivering to their customers. Passenger transport is considered as the primary focus and main market segment.

4.2.4. Risks Associated to Moto-Taxi

Main risks mentioned by all categories of interviewees were accident and assault. **Accidents** are considered common, and triggered by various factors:

1) The lack of knowledge of traffic law.
2) Misbehaviour by drivers, who ride carelessly.
3) Car drivers who do not respect moto-taxi.
4) Lack of traffic signs in certain areas of the city.
5) Poor lighting on main roads of the city, and especially in hard-to-reach areas of the city where some of the passengers live.
6) Poor quality roads, with potholes.
7) Excessive load on the motorcycles.
8) Excessive driving speed.

In addition, there are some beliefs among operators that call for another level of intervention, beyond law enforcement. A statement was made by some moto-taxi drivers, that accidents were a result of fate, as shown below from the response from one of the moto-taxi drivers:

> "*Quando chega o seu dia destinado a ter acidente, não tem como escapar. É por isso que as pessoas fazem acidentes" [When your day of having accident arrives, there is no way you can escape. So, accidents are caused due to fate]*

This calls for interventions that go beyond law enforcement, and touch on changing beliefs, such as religious beliefs by the operators and/or their passengers.

Overall, a closer look at the causes highlighted above, shows that most of these have been well addressed in the municipal stance, and the national traffic law. With proper enforcement, most of these risk factors can be addressed, and reduced. However, there is very little seen as being done, by the law enforcement forces:

> "*A polícia poucas vezes controla o tráfego aqui dentro da cidade. Muitas vezes eles se limitam a controlar viaturas na saída da cidade. E com esse pouco controle, as pessoas começam a pensar que essas exigências não são obrigatórias. Qualquer pessoa que aprende a conduzir motorizada, no dia seguinte pode já estar na praça a fazer taxi-mota."[Police rarely operates in the inner parts of the city, but rather, mostly in the exit points of the city. And with limited reinforcement, people tend to think complying with those requirements is optional. Anyone who learns to drive a motorbike at home, the next day is at the rank acting as a taxi driver] (Moto-taxi operator).*

A cause that was constantly mentioned, was the limited knowledge of traffic code by the moto-taxi drivers, and how this can constitute a danger:

> *"Conheço moto-taxistas que no semáforo, param quando a luz está verde, e passam com a luz vermelha. Isso tudo porque não sabem o significado daquelas cores" [I know drivers who stop at a green light on a robot and move forward on a red light. Just because they don't know what those lights mean] (*Moto-taxi driver)

In addition to accidents, moto-taxi drivers are also at risk of criminal activities such as robbery, especially at later times of the day, as reported by the representative of one of the ranks:

> *"Algumas vezes, principalmente nas altas horas da noite, às 22h ou 23h, há pessoas que fingem ser passageiros. Nos propõem um valor bom, muito acima do que costumamos cobrar. Nós, ao vermos a hora, e o valor que eles vão pagar, aceitamos. Só que quando chegamos ao destino, encontramos o grupo dele lá, e nos assaltam as motas e o valor. Por exemplo, aquele taxista que estás a ver ali daquele lado da estrada, de camisete preta, já foi roubado 3 motorizadas, mas os patrões pensam que ele vendeu as motorizadas. Agora ele está em dívida com os patrões, e já está a pagar"*
>
> *[Sometimes, especially later in the evening, around 10pm or 11pm, we have people pretending to be passengers. They make tempting proposals of paying above the normal fare.*

Therefore, given the time of the day, and the good fare, we accept it. It turns out that when we reach the person's destination, we find a group of his/her friends and they steal our motorcycles. That driver you are seeing on a black t-shirt on that side of the road, has lost 3 motorcycles, and the owners don't want to understand. Now it has become a liability for him, and he is paying for those motorcycles to the owners].

As most moto-taxi drivers reported, there are cases of taxi drivers being murdered during the robbery. Often, as reported, there are also passengers who refuse to pay as they reach their destination, and with fear of being victim of aggression, the moto-taxi drivers do not make any effort to grant the owed payment.

"…muitas vezes, quando temos um cliente à altas horas da noite, quando chegamos ao destino dele, eles fogem sem pagar, ou nos ameaçam de morte ou de nos esfaquearem se insistirmos em lhes cobrar" [very often, in the late-night rides, we get to the passenger's destination, and then he runs without paying for the ride, or threatens to kill or hurt the driver if he insists in charging] (Moto-Taxi Driver)

Different from other locations, such as Nampula City and Chimoio, where cases of passengers being the victims of assault (Ikweli Newspaper, 2022), in Nacala-Porto, there was a consensus among all participants (drivers, users, the Association, and the municipality), that these cases have not been heard. But in either case, they are concerned with passenger protection from potential assaults, and shared some recommendations:

"Cá, nunca ouvimos de assalto a passageiros. Mas se acontece, só pode ser feito por motociclistas que não são moto-taxistas profissionais. Nossas motos não têm nada que identifique quem está licenciado como taxista. Assim, os passageiros não têm como distinguir quem é moto-taxista de uma praça, e quem não é. Se tivéssemos autocolantes ou coletes reflectores com identificação, este risco poderia ser minimizado. Mas ao mesmo tempo, os coletes colocariam os taxistas em risco de assaltos." [We have never heard of assault to passengers here in Nacala. However, if that risk existed, it would happen with non-rank-based moto-taxi drivers. Our motorbikes do not have any form of identification, for those drivers licensed for the activity. Thus, there is no way a passenger will be able to distinguish between a rank-based moto-taxi driver and an opportunistic one. If we had stickers or vests that identify the taxi drivers, this risk would have reduced. But at the same

time, the vests would put drivers at risk of hijack.] (Director of Transport, Municipality of Nacala-Porto)

4.2.5. Existing Policy and Regulations

The municipal government of Nacala-Porto has developed its own legislation for the transportation sector of the municipality, the Municipal Stance on Public Roads, Transport and Urban Transit, approved by the municipal parliament, in March 2020. The stance has 43 articles, including concept composition of public roads, roles and responsibilities of the involved parties, conditions on which the urban transit should happen and governed, prohibited behaviours of public roads, licences, and fines, among other. The document was developed within the defined boundaries set by the national Traffic Law, approved in 2011, and set general principles and rules for transit within the country territory. The national traffic law establishes the entities within the government structures at municipal, provincial and national levels, and the limits of their action, and clearly clarifying that, "the organisation of the transit within the localities, is the responsibility of the administrative bodies and the municipalities" (Decree-Law 1/2011, Art. 9).

4.2.5.1. Minimum Requirements for Motorcycles to Operate

The Municipal Stance on Public Roads, Transport and Urban Transit, states minimum requirements for a motorcycle to operate. These include[6]:

1) Paying an annual moto-taxi fee – costing 200 MT (ZAR 55.40)
2) Vehicle registration – costing 375 MT (ZAR 103.88)
3) Vehicle registration plate – costing 350 MT (ZAR 96.95)
4) Vest – costing 600 MT (ZAR 166.20)
5) Helmet – costing 500 MT (ZAR 138.50)
6) Driving Licence – costing 280 MT (ZAR 77.56)

In addition, the national traffic law of Mozambique also prescribes general principles that should be observed for transit of motorcycles. These include:

1) The mandatory use of lighting systems

[6] Municipal Stance for Public Roads, Transport and Urban Transport (2020)

2) The limitation of carrying passengers under 7 years of age
3) Limit of 2 persons on a motorcycle at a time.

An initial observation was that the amounts charged as fees to operate were not very well known among the various interviewed drivers, as conflicting information was being given during the multiple interviews. In either case, compliance with these requirements was reported to be very limited, mainly due to lack of law enforcement.

For a better idea on how compliant the motorcycle drivers in Nacala-Porto are, a non-participant observation of the motorcycles circulating along the two main roads of the city, was done in two consecutive days, to assess the conditions under which the motorcycles circulate. The observation took place in the evening, from 7.00 pm to 8.00 pm, as this allowed verifying multiple elements on the vehicles, including the lighting system. In total 589 motorcycles used those roads during the observation time. The main findings from the observation were:

1) None possessed a number plate.
2) None used reflective vests.
3) 2 were using a helmet, but only the drivers and not the passengers.
4) 79% had a front light on, 5% had a light but were not using (uncertain of whether it was working or not), and 16% did not have the front light at all.
5) 17% had a rear light.

6) 5% of the motorcycles were exceeding the limits of number of passengers. This data shows a concerning level of non-compliance of some of the requirements to be on the road, and the main reasons for those levels of non-compliance, are analysed below.

Figure 5 - Illustration of a moto-taxi vest



4.2.5.1.1. Reasons for non-compliance with requirements

Discussions were held with the actors in this sector, who explained the findings. The absence of a **number plate**, despites acknowledged as important, including for safety of the passengers (easier to identify the vehicle they used in case of accident or criminal act), has been attributed to the fact that no law enforcement is done on this matter, and therefore, taken by the motorcyclists as an optional requirement.

Regarding the **reflective vests**, the moto-taxi drivers have reported that the municipality has provided vests for the moto-taxi drivers during one of the recent motorcycle training campaigns held. However, during the data collection only one driver was found to be wearing the vest, as shown on figure 6, by the driver that refused to be identified. For others, two reasons were mentioned for not using:

1) **Not having participated in the moto-taxi driver training** where these were distributed, for various reasons, such as work overload, being out of the province during the time of the training, and lack of funds to pay for the training which cost 500 MZN (ZAR 138.50) per person.
2) **Poor quality of the vests among those who received**. There was a constant allegation of poor quality and durability of the vests that wore out after a few months.
3) **Unwillingness to be identified as a moto-taxi driver**. For some of the drivers, they claimed they did not want to be identified as taxi drivers for

> "Wearing anything that identifies me as a moto-taxi driver, can be risky. People can easily have us as their targets for assault or hijack. Secondly, this is not a job that I am proud of. So I am not willing to be seen by my former school mates, who made better in life"
>
> *Omar Ramadan, Moto-taxi operator in Nacala Porto*

their own safety, while one, claimed the work was not as pleasant and reputational as he would like, and thus, not willing to be known as a moto-taxi driver.

Wearing a **helmet** is a two-folded issue. There is a recognized importance of a helmet both by passengers and drivers, but not used, as these are considered uncomfortable. The passengers also refuse to use a helmet for various reasons: some feel hot and fear sweating due to the constant high temperatures in Nacala-Porto; others do not want to ruin their makeup (especially women); and still others, who refuse to use as these may have been used by multiple passengers, and thus posing them at risk of transmission of various diseases (including skin diseases). This is aggravated by the limited law enforcement by the local authorities, making the use "optional".

> "*Capacete é muito importante em casos de acidentes. Protege a nós moto-taxistas, e protege também aos nossos passageiros. Só que os passageiros não aceitam usar capacetes que são usados por muitas pessoas, porque têm medo de apanhar algumas doenças da pele de outros passageiros. E também não é possível cada passageiro comprar seu capacete" [Helmet is very important in cases of accident. It protects us as drivers, but also our passengers. However, passengers do not accept to use a helmet that is public, because they fear getting some skin diseases from other passengers. And it is also not possible for each passenger to buy and carry their own helmet] (Moto-taxi driver)*

The use of a helmet will call for deeper analysis by the municipality on strategies to remove those barriers, as this is an important element for safe navigation on moto-taxi. Experiences exist from other contexts and countries, which the municipality can borrow from, as is the below case reported from Rwanda:

> *"Rwanda National Police has instructed motorcycle taxi operators to supply head covers to passengers to wear under helmets or face disciplinary action for failure to protect passengers from skin related diseases"* (IGIHE Reporter. 2012)

Regarding the absence of (or limited) **use of lights**, this is more pronounced with the rear lights and turn lights. On the one hand, all the taxi drivers and passengers recognized the importance of all lights, especially when riding in evenings. The front lights have been seen as improving the navigation on poor quality roads, such as those containing potholes and erosion, and with these lights, riding becomes safer; the rear light was seen as helping reduce accidents, as these can show

breaking, to the vehicles coming from behind, and these can also allow better visibility of the motorcycles for the vehicles coming from behind, especially when it is dark. For turning lights, the advantages pointed out include showing the manoeuvre of the vehicle. Despites this recognition of their importance, there was only 17% use/possession of a rear light and an even less possession of turn lights (the measurement was not documented during the observation).

Figure 6 - Illustration of a motorcycle with a front light, but without a rear or turning light.



At the rank level, all the moto-taxi drivers found on ranks possessed a front light, but very few had a rear light. The reason has been indicated by one of the representatives of the taxi drivers, who mentioned intentional removal from the vehicles, as an attempt to avoid those parts from ageing out and allow these to be mounted back for a future sale of the motorcycle, which will increase its market value. That applies, not only for rear and turn lights, but also for many other accessories considered not essential for the vehicles to operate, as illustrated by the following statement:

> "*Muitos destes taxistas têm todos acessórios guardados nas suas casas. Quando compram motorizadas novas, o que eles fazem é desmontar todos acessórios que não impedem as motas de funcionarem. Eles guardam os acessórios para não envelhecerem. Mais tarde, quando decidirem vender as motas, devolvem as peças na mota e conseguem vender com preços mais altos" [Many of these drivers have all accessories well kept in their homes. When they buy a new motorbike, what they do is to remove all the accessories that are not critical for the motorbike to function. They keep them so that these do not become old as they use the vehicle. Later, when they decide to sell the motorbike, they mount back those accessories, and they can sell the motorbikes at higher prices]* (Moto-taxi driver at the Maiaia Rank)

Finally, with regards to the non-compliance to passenger limits, the drivers have mentioned passenger preference, to save on the fare, when two passengers are travelling together, and more advantage for the drivers, as they charge, as total fare, slightly higher than what they would have

charged for a single passenger. One motorbike can easily carry up to 6 passengers on a single ride, and since this is not reinforced by the existing law enforcement agents, it prevails as a common practice. On the other hand, this practice is recognized as increasing the risk of accident, as the overload does not leave space for a safe driving of a motorcycle as highlighted by another taxi driver:

> *"O senhor está a dizer que viu uma motorizada carregando 3 pessoas. Mas há casos em que carregam até 5 ou 6 pessoas. Para nós não é muito confortável conduzir com a motorizada cheia de passageiros, porque ficamos com pouco espaço para fazer manobras, e isso pode aumentar o risco de acidentes. Mas às vezes não temos escolha. Se os passageiros querem partilhar a mota, e nós podemos cobrar uma tarifa mais alta, acabamos aceitando." [You are saying you have seen 3 people on one motorbike. But there are cases where you see even 5 or 6. It is not very comfortable for us to be driving on very limited space that remains on the bike, and we can have an accident due to that. But there is little we can do. If the passengers want to share, and we want to have higher incomes, we accept it]*

4.2.5.2. Pricing of Moto-Taxi Services

Moto-taxi fares are determined by the drivers, unlike the fares for the commuting buses that are centrally determined in an agreement between the representatives of the bus drivers and the municipality. There is no procedure or entity that determines the applicable fares for moto-taxis. These fares are relatively higher than the commuting buses, as the minimum distance is charged 20MT (ZAR 5.54) for moto-taxi, compared to 10MT (ZAR 2.77) for the commuting buses.

The fares, in all cases, are partly dependent on the costs of operation, including cost of fuel and other relevant costs, such as maintenance. Both the moto-taxi drivers and the users/passengers, consider the current level of fares to be acceptable.

4.2.5.3. Fitness Standards

Cervero (2000) defines fitness standards as a set of characteristics that vehicles need to possess to operate, such as minimum age of the vehicle, and similar requirements. In addition, the White Paper on the Transport Policy of the AU (Shelley & Chatelin, 2016), has indicated as one of the challenges for urban transport, specifically in relation to motorcycle transportation, the reflection on how to reduce GHG emissions. Looking at the country law, there is a specific mention, as a

requirement, of the need to prevent air and soil pollution. It clearly prohibits the motor vehicles to operate when these emit gases above specific limits or smoke above specific limits.

However, among the drivers, these are completely unaware of any such required fitness standards for vehicles to operate. Neither were they aware of any standards or limits of GHG emission. The Municipal Stance is also silent regarding these requirements for fitness, which makes the operators only bound by the national law, which, however, finds a weak local institutional capacity to enforce these requirements.

4.3. Organisation of the Sector

The moto-taxi drivers concentrate in small groups (ranks) that range from 3 drivers at a time, to more than 15 operators (see figure 7, an example). These conglomerates are based at junctions along the main roads of the city. Almost every junction has a moto-taxi rank. Others concentrate in other popular areas, such as supermarkets and local markets. In addition to the rank-based moto-taxis, there are also other motorcyclists, who engage in paid moto-rides as opportunities arise, but these do not have this activity as their primary source of livelihood. Any pedestrian they see walking along the main roads are invited for a taxi ride, in return for a fare.

Figure 7 - Example of a moto-taxi rank in Nacala-Porto



According to the municipality, there was an attempt by the institution to support creation of a local organisation of taxi drivers, to help better organise the sector. An association (Association of Moto-Taxi Driver of Nacala-Porto – AMONAC) was created in 2020 but lacks an official endorsement (publication in the national gazette), due to lack of required internal funds. The municipality provided an office for the association to operate, but it is still non-active. An important note is the very limited (or no) information about the local association of moto-taxi operators, among the moto-taxi drivers. It was completely not mentioned by the moto-taxi drivers during the data collection process, as the association is yet to take-off, and thus not having concrete interventions as the prime actor.

Two things explain this lack of knowledge. On the one side, the association is still in the process of creation, and all the activities implemented thus far, have been related to supporting other

institutions (Association of the Volunteers and Orientation to the Moto-Taxi Drivers of Nampula-AVOTANA, and Mozambican Police Association-AMOPAPI) in delivering two trainings (capacity building), targeting the moto-taxi drivers in the municipality, which positioned the AMONAC as a "shadow", with very little visibility. Secondly, although the moto-taxi operators have expressed the willingness to have an association representing their class, the creation of AMONAC was triggered by the municipality, and not by the operators, which influences the level of ownership.

To compensate for the need for such organisations, some of the ranks have created their local organisations that act at the rank level. These are a group of permanent operators in a rank, who informally choose their representative, among the oldest operators in that specific rank. Overall, as widely reported by the operators, any form of organisation is welcome, as they see these entities as protecting the interests of the class, by:

1) Working as an interlocutor, that takes the operators' concerns, and channelling to the municipality, such as when there is excessive oppression from the police.
2) Contact the municipality to seek for updates in the existing laws, for awareness by the operators, and avoid unnecessary traffic violations.
3) Inform on any opportunities for training for operators organised by the municipality.
4) Facilitate access to loans/leasing, and help the class purchase new vehicles.
5) Create mechanisms for solidarity within the group, for instance, when one has an accident or is a victim of any criminal acts.

4.4. Financial Incentives

The Municipality has established fees for licensing moto-taxi services at rates relatively lower than those applicable to other forms of public transportation. Table 2 presents the annual licence fees for the various modes of paid passenger transport:

Table 2 - Comparative licence fees for various forms of paid passenger transport in Nacala-Porto

Type of Transport	Annual licence fee (MZN)	Annual licence fee (Equivalent in ZAR)
Tchopela (*Tuk Tuk*)	1,200.00	332.41
Moto-Taxi	200.00	55.40
Car Taxi	2,500.00	692.52
Public Bus	3,615.00	1,001.39

Source: Municipal Stance on Public Roads, Transport and Urban Transit (2020)

Apart from lower annual fees, there are no other forms of financial incentives for the moto-taxi. According to the moto-taxi operators, for that municipality there are no financial services that facilitate access to credit for moto-taxi. This is among the reasons they see the need for an official organisation of the sector operators. With an association, they believe a channel would be open for initiating a dialogue with financial institutions for leasing of motorcycles, and also for insurance schemes. In the worst-case scenario, an organisation could facilitate some form of savings that could be used to assist operators who lose their vehicles or any other social problems (such as health assistance after an accident).

Despites the inexistence of such incentives, the municipality has been in contact with a private sector organisation that is willing to subsidise the sector. According to the Director of Transport of the Municipality, a potential Public-Private Partnership (PPP) is under discussion, with Grindrod. The inability of the municipality in subsidising/granting access to essential self-protective equipment for the moto-taxi drivers, and inability to grant adequate and needed training program that will equip the drivers with knowledge of traffic law and improve their driving behaviour, has triggered interest from that logistics company, to, building on a similar experience from another municipality, support Nacala-Porto by subsidising access to reflective vests, helmets, and a round of training program for the moto-taxi drivers.

4.5. Infrastructure Improvements and Traffic Management

According to the Director of Transport of the municipality, there has not been any modifications of the infrastructure due to the emergence of the moto-taxi, as to improve the safety or efficiency of the sector. In addition, across the entire municipality, the observations taken before or during the data collection, have shown moto-taxis riding along the other users of the roads, and sharing lanes. This sharing of infrastructure has been mentioned by the operators and users of the moto-taxi, as one of the reasons behind the frequent accidents involving moto-taxis. The terminals where the moto-taxis base their operations are improvised. They park their vehicles on junctions, and sometimes on sidewalks along the main roads, without any special arrangements/indication of “Curb rights” (Cervero, 2000:170)

4.6. Training

There are no regular trainings for moto-taxi drivers or any other motorcycle drivers. The municipality is responsible for issuing driver licence for driving motorcycles up to 50cc, and bicycles. As per the municipal stance code:

> *"Licences for driving motorcycles up to 50cc and bicycles, will be granted by the municipal government, upon passing an exam of the knowledge by the candidate"* (Municipal Stance on Public Roads, Transports and Urban Transit, article 16).

The stance also states the penalty for driving without a licence, which ranges from 750MT (ZAR 207.76) to 1500MT (ZAR 415.51). As the monitoring system for this cohort of drivers is not very organised as for the cars, where a tickets can be issued and paid by the driver at a later date, the municipality has established that these tickets need to be paid by the drivers, as soon as they are issued, or the motorcycle is seized and taken to the parking of the municipal police, until payment is made.

On the other hand, the municipality lacks a consistent training program for motorcycle drivers, for licensing new drivers. Two trainings were held since the moto-taxi activity began, and these were organised by AMOPAIP and AVOTANA. The local logistics and invitation of the training participants was facilitated by AMONAC. This brings into question the effectiveness of the requirement of a knowledge exam, as a condition for licensing the driver, as per the municipal stance.

Nevertheless, for routine licensing, the law establishes that the issuing of a driving licence is done by presenting a set of documents to the municipal authorities. The candidates are required to pay 280 MT (ZAR 77.56) for the licence, which is issued on the same day, or the next day, at the latest. It was consensually reported (by all the respondents who reported knowing about the motorcycle driver licence), that during this process, there is no test done on the candidates, to check their knowledge of the traffic law, which contradicts the municipal stance. This is an important finding, as the implication could be that licences are being granted to people without basic knowledge of traffic registration, which questions the value of the licence, apart from being a source of funding for the municipality.

Figure 8 - Moto-taxi License issued by AVOTANA



Finally, the president of AMONAC has reported an attempt by the association to create a motorcycle driving school in the district, but this plan did not proceed, for unshared reasons.

Conclusion

This section has brought relevant data from main actors to enlighten on the emergence of the informal moto-taxi transport in the municipality, the factors that explain its rapid and continuous growth, process of regularisation of the moto-taxi activity, and the main challenges facing this process. Overall, there is a consensus that the moto-taxi has helped resolve one of the challenges facing the citizens in the municipality, in relation to their mobility, and youth unemployment. This explains its growth in recent years. The municipality has made efforts to regulate the sector, assuming its informal nature, but gaps exist in ensuring effective implementation of the sector-specific regulations, mainly due to institutional weaknesses to reinforce the implementation of the policies and regulations.

The municipality has made efforts towards regulating the moto-taxi activity in Nacala-Porto. The existence of a specific local legislation for the sector, with a specific stance, is clearly an indication of this effort. However, despites these efforts, the moto-taxi sector continues to operate with low compliance to the requirements. In addition to these, below is presented a complementary rapid analysis, by looking at the main factors that lead the sector to continue to operate as informal, which could help understand the effectiveness of the undergone regularisation process, by looking at the list of barriers to formalisation, by ILO (2021):

1) **Cost for registration/formalisation that are not always affordable for the informal sector operators**. There is a relative consensus about the costliness of the registration process, among the operators. According to the municipal stance for public roads, transport, and urban transit, one would need to pay 2,305.00MT (ZAR 638.50), which is about 50% of the national minimum wage, to be fully registered (vehicle registration, possessing a vehicle registration place, payment of annual fee, driving licence for the operator), and this is considered high by all interviewed operators.
2) **Complex processes for formalisation of the business that is not mastered by the informal operators, such as online registration requirements.** This is not a barrier in the case in Nacala-Porto. There was a relative consensus that the process is relatively simple. Once one reaches the municipal government office, s/he can easily be guided through the various involved departments, and information is easily shared with applicants.

3) **Insufficient benefits (or at least lack of clarity on the benefits) for becoming formal.** There is somewhat limited information on the benefits of being formal (or licensed), among the respondents. On the other hand, there were two main benefits they were willing to get from the local authorities, in return for being formal/registered: (i) protection from assaults/hijacks, and (ii) possibility of getting a lease for vehicles. However, both are not currently in place. If, on the one hand, there is a recognition by the municipality of limitations to provide protection from assaults for all the operators, on the other, there are no institutions offering leasing for motorcycles, currently in the municipality.
4) **Lack of knowledge about the very complex processes and requirements for formalisation/registration.** The starting point for registration was widely known among the moto-taxi operators, be them old practitioners, or new. Respondents also knew about the easy navigation through the process, once they reach the entry point. In addition, the respondents also confirmed the process of registration as being fast, and the 1 to 2 days needed for a registration, was a common response among those respondents.
5) **Lack of trust on the agencies to which they have to report, once they become formal**. There was a recurring feeling of disconnect between the operators and the municipal authorities, especially with regards to training, costs for registration, or when other concerns from the operators arise. There have also been concerns raised about corruption, where bribery is made to law enforcement agents, for any irregularities on the drivers or on the motorcycles.

"Há vezes em que a polícia pára em algumas ruas da cidade para fazer fiscalização das motorizadas. Mas basta dar um valor, e eles libertam as motas. Não é por acaso que há taxistas que continuam a circular sem as mínimas condições." [There are times when the police stop on some city streets to inspect motorbikes. But just give a price, and they will release the bikes. It is no coincidence that there are taxi drivers who continue to circulate without the minimum conditions] (Moto-taxi driver).

6) **Lack of mechanisms to be heard when public policies are being developed, and this leads to inadequacy/inefficacy of existing/developed government policies, regulations, and strategies**. There was an attempt by the municipality to organise the moto-taxi drivers.

As a result, AMONAC was created. However, this association is yet to be active, due to various factors, as stressed previously.

7) **The existing tax regime in the countries, which do not require a certain volume of business to be registered. If combined with other advantages of continuing informal, there will be no motivation for formalisation/registration**. The findings from Nacala-Porto, show that, although the registration/licensing for a moto-taxi to operate, is mandatory, and a penalty for non-compliance is established, the enforcement of this law is not consistent, thus creating a perception of a non-mandatory requirement among the operators, and very few have got any form of licensing. Taxation, since it is not known or reinforced for this industry, was not mentioned as a barrier for registration. On the other hand, the fees required for registration have been mentioned as high and unaffordable by the operators.

8) **Lack of capacity on the government's side to communicate and hear the concerns from the informal sector. This can also take the form of lack of adequate infrastructure by the government to respond to the number of informal operators and to a potential demand for formalisation**. The municipality recognizes the lack of capacity, in quantity and adequate skills, to cover and adequately respond to the demands of the moto-taxi sector. Firstly, the legal requirements for the sector may not have been adequately published, since most of the operators were not aware of the municipal stance for the transport sector. Some awareness of the fees for getting a licence were mentioned by some of the operators (especially those already in the sector for considerable time), but their responses on the amounts payable for the licensing fees, differed from one respondent to the other. In addition, apart from the communications done to mobilise operators for the two trainings held thus far, there was no confirmation of any other consistent and structured communication between the municipality and the operators.

CHAPTER 5: ANALYSIS OF THE RESEARCH

This section presents an analysis of the findings based on the existing knowledge about the topic in other contexts. The analysis is grounded on the existing conceptual frameworks, as discussed in the literature review, especially the frameworks inclined towards regularisation of informal transport. The section reflects on the findings from the data collection, and brings it into perspective on the existing conceptual framework, where commonalities and differences are identified, in a way to help develop actionable recommendations to the specific context of Nacala-Porto.

5.1. Informal Public Transport in Nacala-Porto

The nature of the informal transport sector in Nacala Porto, is consistent with the context of the informality in other developing countries. On the supply side, the emergence and growth of this sector stems from the gaps in public provision of transport services, and the pronounced youth unemployment, who saw an opportunity for granting their livelihood. These two factors found a fertile ground for flourishing, in a context of high motorization, created by the entry of affordable motorcycles in the municipality. This dynamic coincides with the underlying factors for the emergence and growth of the motorcycle taxi industry in other developing countries, as largely confirmed by various scholars, such as Olvera et al (2020), combined with the view of economic environment factors as determinants of informality by ILO (2021).

On the demand side, the relative flexibility of this mode of transport, as compared to the mass transport means, translated by its operation without fixed routes and stops, by the possibility of getting to the passenger's exact location, the more extended working hours, the possibility of navigating on poor roads, and the relatively shorter time taken to get to destination, are among some of the important features that led to the rapid growth of the mode of transportation.

On the institutional side, the existing gaps in the legal and regulatory framework, and weak public institutions and enforcement mechanisms (ILO, 2021), also influenced the emergence and sustaining of the informal public transport sector in Nacala-Porto.

This service is mostly operated by youth, in specific competitive niches, and operating on a horizontal structure with independent operators (Cervero, 2000); there are some forms of

organisation they have created, although rank-based, and there have been attempts to create a more structured form of representation (Cervero, 2000); they operate in a *laissez-faire* environment, with very limited law enforcement, operating without official endorsement, using vehicles without proper licensing, permits, and/or registration, and without insurance (Golub, 2007).

Nevertheless, the advantages brought by this form of public transport, from the various perspectives, outweighs the drawbacks related to the activity, which is in line with the legalist view by Fuchs & Fuchs (2021), for whom informality is partly sustained by the competitive advantage over the formal sector. These advantages, as they viewed, that include self-employment, flexible labour safety rules compliance, among others, have led the local government opting for a regularisation path.

5.2. Regulatory Reforms

As the research data has shown, the municipal government of Nacala-Porto, has put in place a legislation, that governs the urban transit system within the municipal area, through the approved 2020 Municipal Stance on Public Roads, Transport and Urban Transit. The subsections below will look deeply into this important normative document, through the lens of the framework of regularisation.

5.2.1. The regulation for the moto-taxi sector in Nacala-Porto

From the perspective of the municipality, regularising the moto-taxi in Nacala-Porto, will serve to resolve a critical problem of ensuring provision of transportation services to the citizens, improve safety of the activity, and create a source of additional income, through tax and other applicable fees. For the operators, they see regularisation, as bringing fairness to the sector, through mechanisms of controlling who is really a moto-taxi driver, and a mechanism of their own protection from externalities, such as assault and accidents. From their perspective, with a sector-specific regulation, and once an entity is created to represent the class, the resulting control of the sector (entry and exit controls) will allow them to create their own savings schemes and provide support to victims of assault/accidents to recover. At the same time, a representative body could facilitate processes of negotiating mechanisms for leasing of motorcycles and other loans. For the moto-taxi users, they see the regularisation, as a means by which their safety from accidents will be improved, as driving licences, lighting requirements, number plates, identification of operators, and other fitness standards, could come along as part of the regularisation process.

Despites all this consensus on the importance of regulations for informality, scholars warn, from the perspective of the government, that this process may not be an easy task. A good example of such hurdles to the process is shown by the proxy (as it looks at formalisation rather than the sole regularisation) provided **basic equilibrium model**, which states that, if the trade-off between the costs associated with the formalisation and the cost reduction from being formal, shows heavier burden on the costs of formalisation, the sector will remain informal/unregularised. In addition, for the specific case of Nacala-Porto, two additional barriers are found as hindering the efforts towards regularisation of the moto-taxi: the high costs associated with a formal activity (for instance, the costs for regularisation), and institutional/legal barriers, that essentially are associated with the inability by the municipality to assure law enforcement and institutional support for the operators.

Nevertheless, the municipal policies and regulations for the sector should be designed in a way that is aligned with the target 11.2 of the 2030 Agenda for Sustainable Development, of ensuring access to safe, affordable, accessible and sustainable transport systems. Thus, regulations are needed, to set minimum standards for operating, including, as suggested by Cervero (2000), criteria for entering the market, rules for pricing, service characteristics, safety requirements (including, insurance coverage, for instance), fitness standards, etc.

5.2.1.1. Lack of Viable Employment as a Reason for Engaging in the Moto-Taxi activity

In Nacala, the moto-taxi drivers have engaged in the activity as an alternative employment. This is consistent with what is widely known in the literature. As raised by Cervero (2000), and reinforced by Chen (2012), the increase on the moto-taxi movement, while triggered by various factors, the common factor leading to its rapid growth in the developing countries, is the increase in urban unemployment, combined with the inability by these countries, to create jobs, especially for youth. And this might be the main explanation why youth (under-35) are the most engaged in this activity.

The strategic objective 6 of the quinquennial plan of the government of Mozambique, verses around the need for job creation for youth and marginalised population groups. It recognizes the fundamental importance of employment, by acknowledging it as a means of insertion of the individuals in the society, and targets the creation of stimuli, to youth initiative and entrepreneurship for employment (National Gazette, 2020). At the same time, the trends in

unemployment in the country are worrisome (Ulrich and Walker, 2018). If, on the one hand, the labour force is growing and getting younger, especially in urban areas, the unemployment rates have increased from 14.1% in 2008, to 21% in 2014, and 26% in 2019 (INE, 2021). A rural/urban comparison shows that the problem is more pronounced in the urban area (where the unemployment rate in 2019 was estimated at 43%, compared to 16% in rural areas), and is higher among females (27%), compared to their male counterparts (25%). It is in this context that the role of such informal initiatives as the moto-taxi, are considered by the government (local and national), as initiatives to be supported, thus taking more of a view of heroism than crisis, as conceptualised by Roy (2005).

5.2.1.2. Concerns linked to moto-taxi activity in Nacala-Porto

Like in other locations, there are concerns linked to the moto-taxi activity. In the specific context of Nacala-Porto, criminal and safety concerns have been raised by the respondents, be it the municipal government, the operators, or the passengers (users). A different assessment could help quantify the magnitude of the **safety concerns**, but a consensus exists that road accidents among moto-taxis are common. The causes of accidents are various, but the most mentioned included, careless driving among the taxi drivers, lack of knowledge of traffic rules/code by the operators, lack of minimum standards for the vehicles to circulate (including lighting systems), overloading of the vehicles, over speeding, careless driving by other users of the roads (including car drivers), and bad conditions of the roads. The lack of consistent driver training programs, together with the limited law enforcement by the municipality (limited number of personnel for law enforcement, corruption, and institutional disconnect within the municipal government), have been pointed out as contextual factors that limit all the efforts put in place to improve the safety of the activity.

Regarding the **criminal concerns**, facts from other contexts also exist in Nacala-Porto. The assaults on moto-taxi drivers reported in Nampula City (Ikweli Newspaper, 2022), Chimoio (Miramar, 2023), and other places in developing countries (Starkey, 2016), have also been confirmed. In Nacala-Porto, all respondents have reported having been victims, or knowing victims, of such assaults, where drivers are violated or not paid. The flexible operating hours of the moto-taxi (which can operate in later hours in the evening), the lack of identifiers of licensed taxi drivers, and the limited capacity of the defence and security forces (including police), to grant all the needed protection, are among the factors fuelling these criminal risks. On the other hand,

and different from other locations, in Nacala-Porto, assaults on passengers/users have not been reported, which makes it less of a concern at the present, although all the actors recognize the need for preventive measures.

These concerns call for considerable attention from the local authorities, with the view of achieving the target 11.2 of the 2030 Agenda for Sustainable Development, and should be used to shape the measures to be defined in the regulations.

5.2.2. Elements Involved in Regularising Moto-Taxi in Nacala-Porto

The fundamental assumption used by the municipality of Nacala-Porto to make any policy decisions around the emerging moto-taxi activity, was on the value of this service in the overall scope of public provision of transportation services to the citizens of the municipality. As clarified by the municipality, the phenomenon arose in a context when the demand for public transportation was not being met through adequate provisions in terms of quantity and quality, and the legislation was not prepared to accommodate this new form of public transport. This demanded an adaptation of the legislation, to achieve the primary goal of providing services, in a safe manner, to the citizens. This is consistent with the view by various scholars, including Shittu (2014: 78), who recognized that:

> "*The benefits of the sector, such as organisational capacity, the ability to provide responsive services regardless of the unfavourable environment, are advantages that must be sustained"*.

Following the spectrum of regulation of informal transportation by Cervero (2000), the findings show that the Municipal authorities of Nacala-Porto have initially attempted to regulate the sector, and later, regressed to a standpoint that lies between recognition and regulation. This is so, because, beyond approval of a specific regulation, little has been done to take this regulation into effect.

The lack of capacity and resources for the local government to opt for an extreme policy choice of prohibition, given the inability to find viable alternatives to the moto-taxi, which would resolve the problematic of urban transportation and the problematic of urban unemployment, has led the municipality to recognize and regulate the sector, as highlighted by the model by Cervero (2000).

5.2.2.1. Adapting the Legislation

As a starting point, the existing legislation for the transport sector was adapted/adjusted to this new form of public transport. Mozambique has a general traffic legislation that prescribes various forms

of transportation. The flexibility allowed by the legislation, and the decentralisation of the responsibility to adjust the legislation to the local context at the municipality level, have contributed to a more effective tackling of innovative forms of transportation. This flexibility allowed coping with differences in the dynamics facing the transport sector in different locations. As an example, while the adjustments in Municipality of Maputo City incorporated minimum size of motorcycles for moto-taxi at 125cc for the two-wheelers, and considering also three-wheeler vehicles, in Nacala the reality has shown that 50cc two-wheeled motorcycles were the most adopted by the residents.

In Nacala, the legislation also adapted the costs of registration and taxation, to the local context, although those continue to be considered unaffordable, from the perspective of the moto-taxi drivers, yet at the same time, the municipality needs to continue to collect taxes to maintain the needed services, and support and monitor the activity. Through dialogue these need to continually be adjusted, given the importance of finding an optimal fee, since taxation is one of reasons why businesses prefer to remain informal (Ocran, 2018).

The most important elements covered by the legislation of Nacala-Porto, include:

1) Minimum Requirements for the vehicles
2) Minimum Requirements for the Drivers
3) Description of types of transport
4) Service Characteristics
5) Penalties for non-compliance

On the other hand, there are elements that are critical, listed by Cervero (2000) that are not considered in the local legislation, and omitted in the national legislation. These are: technological requirements (which are not specified by the legislation, making any vehicle, even the oldest, to be able to operate), fitness standards, pricing rules (which are left to be determined by the market and the operators themselves), and criteria for market entry, which are not mentioned at all in the Municipal Stance. There is also a complete silence around environmental standards, as per the AU Transport Policy Framework

5.3. Financial Incentives

Given the shortage of resources to make the regularisation of the sector a viable project, the municipal government has identified and initiated contacts to establish partnerships with private enterprises. This was the case of Grindrod. The object of the intended partnership is to improve the safety on the roads of the municipality and reduce traffic accidents. Grindrod intends to build on experience from their work in other municipalities in Mozambique and support the municipality, by providing critical services that will make moto-taxi a safe activity. This will involve subsidising access to vests, support training campaigns for moto-taxi drivers, and other interventions, and it will minimise the burden that currently lies on the operators.

There are some examples of such arrangements (public-private partnerships), from which the municipality can learn. Building on the case of informal urban settlement, ILO (2007) considers that these partnerships can facilitate local employment creation especially for disadvantaged groups (including youth and women) and encourage labour-intensive methods to deliver goods and services. This is a good example of how financing transport sector policies can be leveraged through partnerships, as widely discussed in the body of knowledge of the political economy of urban transportation.

Apart from the efforts to engage private sector in the informal activity, which will be done through incentives in the form of provision of free or subsidised trainings and/or vests, and the relatively lower licence fees for moto-taxis, no other incentives have been planned by the municipality, compared to what the regularisation framework for informal transport suggests (Cervero, 2000).

5.4. Organisation of the Sector

The efforts by the municipality to support creation of a moto-taxi association is consistent with various scholars' perspectives, as a step to facilitate regularisation. The municipality supported such organisation as a strategy to fill a gap in ensuring compliance with the legal requirements for the actors in the sector, help establish sector-specific rules and regulations (such as helping to control new entrants, and ensure social support among practitioners), and be an interlocutor that will voice the concerns from the moto-taxi operators. Cervero (2000) has pointed to the fact that, the establishment of structures of representation of the informal sector, is one of the common aspects of the process of regularisation of an informal activity. According to him, these may take a form of route association (focusing on bringing fairness in accessing revenues by the operators),

or covering a bigger area, to act as a self-regulating mechanism within the sector. Nacala-Porto has both forms of organisations: one covering the entire municipality, which, however, has not taken off for various reasons, and rank-specific associations.

With regards to the already created organisation, one aspect that is of special interest/attention, is the fact that the creation of this association was not triggered by the practitioners, but rather, by the municipality. A question for such top-down approach of creation of an association, is on how effectively the association would represent the intended target group, and the level of ownership and control by the operators. As an alternative, there could be a collaborative process to voice and empower more the informal organisations already created at the rank-level, while incentivizing the strengthening of those structures until it becomes a real representation of the group across the entire municipality, following a bottom-up approach that normally characterises the organisation of paratransit operators.

5.5. Infrastructure Improvement and Traffic Management

The research in Nacala-Porto has shown that at the municipality, changes were not done at the level of the infrastructure, to accommodate the emergence of moto-taxi. No specific stops were constructed to accommodate the operations of the moto-taxis, and they share the same roads as other users of the public roads (private cars, commuter buses, private motorcyclists, etc), since no improvements have been done off-street or on-street in any form, as the defended by scholars for similar cases (Cervero, 2000), as measures to improve the quality of the informal transport services. This is further raised by Holve (2022) as a recommendation for urban transport planners, to accommodate needs of marginalised groups, as well as for a well-functioning multi-modal system of urban transportation. It is not very clear, however, under what circumstances are these improvements needed, and that could be a subject for additional research, but one fact that has been raised by Rappler (2020), is that the sharing of road facilities, between the paratransit and bigger vehicles, is among the major reasons for deaths among motorcyclists.

5.6. Training to the operators

Training to these has been widely discussed in the literature. It is acknowledged that not wearing helmets, excessive speeding, not stopping at road junctions, exceeding the passenger limits, and not using appropriate turn signals, are among the causes of road accidents involving moto-taxi operators (Akinlade & Brieger, 2004). Adding to these facts, is the low literacy level among these

informal practitioners, which calls for a training program as an effective mechanism of transferring knowledge to the actors, and this training should go beyond the good and safe driving practices, but also covering customer relations and conflict resolution (Cervero, 2000). The Municipal Stance on Public Roads, Transport and Urban Traffic, mentions driver licence as one of the requirements for a moto-taxi operator to be on the road, which could be understood as a legal confirmation of possession of basic knowledge of traffic legislation, rules and regulations. However, the data has shown the existence of a process of provision of a driver licence, but without any form of training to operators on traffic legislation, as confirmed by the Director of Transport of the municipality of Nacala-Porto and the operators. This questions the value of the driving licences currently issued by the municipality, and the need for rethinking this process.

5.7. Environmental Considerations

Attention to environmental considerations is also well discussed by various scholars, including Cervero (2000), in the form of sustainability of the informal transport, Thakur et al (2020) in the form of technological regulations to tackle obsolescence and setting minimum age of the vehicles, and Haas (2022), in a discourse that suggested specific legislation on GHG emission standards. However, neither the national traffic law, that is the overarching legal instrument for road transport, nor the municipal legislation, clearly tackle this matter. It is also an unknown topic among the moto-taxi operators. This happens in a context where the Republic of Mozambique is signatory of various global and regional protocols for controlling GHG emission, such as the Paris Agreement, United Nations Framework Convention on Climate Change (UNFCCC), the United Nations (UN) Sustainable Develop Goals (SDGs), the SADC protocols on the matter, just to mention a few. This places the need for considering this matter in the existing legislation.

Conclusion

This section has shown that the municipal government of Nacala-Porto has made significant progress towards regulating the informal public transport sector of moto-taxi. The importance of the sector, given its role in public provision of this essential service, has led the municipality to follow a pathway that literature defends as most advised for developing countries, which is the regulation, rather than prohibition, neither formalisation. Gaps prevail, however, which need to be tackled, especially to ensure a more comprehensive legal framework, but also adequate capacity for law enforcement, and additional needed considerations, such as traffic management,

environmental standards, that are part of the conceptual framework of regularisation on which the study was framed, and widely accepted as having shaped major regularisation processes.

CHAPTER 6: CONCLUSIONS AND RECOMMENDATIONS

The study has shown that the emergence of the moto-taxi activity as an informal means of transportation in Nacala-Porto, has followed a similar pattern in many developing countries. The lack of employment for youth, the existence of affordable motorcycles in the market, and a gap in the provision of public transport by the local municipality, are among the main drivers for the emergence of the sector. At the same time, the relatively higher convenience of this form of public transportation (operating at times when commuting buses do not operate, ease access to very hard-to-reach places of the city, the possibility of getting to the passenger's house, and relatively shorter times taken to destination compared to commuting buses) from the passenger's perspective, have led to its rapid growth. The activity has been established as an informal sector/livelihood, accompanied by adjustments of the existing legislation to accommodate some of the needs of the sector.

As a first conclusion, there is a consensus of the relevance of the moto-taxi activity. In addition, the perspective taken by the municipality on the goal to be persecuted, is consistent with most of the views of informality in developing countries, which is highlighted by Gajigo & Hallward-Driemeier (2012), who recognize that formalisation should not be a goal. However, it is important to recognize areas that constitute drawbacks of the informal transport and appreciate the areas of the formal transport systems that are advantageous, from the public provision perspective. Those areas include sustainable employment, social protection of the operators, and access to credit/capital, which call for analysis on how these could be granted to the informal operators, while continuing to operate as an informal sector. This is not necessarily subject of this study, and should be part of the reflection processes among the actors in the sector.

With regards to the research questions, and assuming formalisation should not be the goal, steps have been taken by the municipality of Nacala-Porto, with the view to regularise the sector. When this informality emerged, the position of the municipality was of acceptance, and later, as it continued to flourish, efforts were made to regulate, despite the prevailing gaps, that make the measures stand between recognition and regulation. Therefore, the process entailed the establishment of a specific regulation, which was approved by the municipal parliament in 2020, establishing the conditions under which the activity could be operated: licensing for the drivers

and motorcycles, the due fees and taxes, the minimum conditions for the motorcycles to make it to the streets, among other. Essentially, the adaptation consisted of shaping the already existing national traffic law, to the local context.

Besides the adaptation of the local urban transport policy (the municipal stance on public roads, transports, and urban transit), the municipality has organised two sets of trainings for the local moto-taxi drivers, with facilitation from AMOPAIP and AVOTANA, organisations that operate at national and provincial levels, respectively. This effort was a sign of the relevance that the municipality has given to this critical element of the local policy, while at the same time the absence of a more consistent training program remains a gap for full implementation of the policy requirements: if completing a training is a policy requirement for getting a licence as a moto-taxi driver, what options do potential drivers have to comply with that requirement in the absence of such consistent program.

Thirdly, a critical step taken by the municipality towards regulation of the activity, was the support in the creation of a moto-taxi drivers association, AMONAC. As seen in the literature review section, this is an important element for the effective regulation of an informal activity. However, despites these efforts, AMONAC continues to be inoperant. As a result, the lack of a functioning association creates a gap to the efforts to regulate the sector, by not placing the self-regulation as a compensation for the inadequate law enforcement services. To minimise the gap, smaller associations (or similar) have been created at the rank level, which are seen as better representing the class, and thus could be elevated to fill in the gap that is left unfilled by AMONAC. This would essentially be the bottom-up approach widely discussed in literature around creation of bodies of representation of the informal sector.

Despites all the effort, and as already mentioned, these steps were not accompanied by adequately planned and established law enforcement services, making compliance with the policy, apparently optional from the perspective of the drivers and users: very few drivers possess a driving licence, moto-taxi licence, knowledge of the traffic law, neither comply with the minimum standards for vehicles to operate (possession of a number plate, insurance, helmets, vests and lighting system), although both the operators and users of the services, recognize the vital importance of these requirements for their own safety. This was further aggravated by the weak institutional capacity

to effective implementation of the policies, translated as lack of adequate number of law enforcement agents, and a prevailing institutional disconnect within the municipality departments.

The limited institutional capacity has contributed to the aggravation of the already critical concerns resulting from the moto-taxi activity. Apart from risks of accidents, the drivers are constantly victims of criminal acts in various forms. If, on the one hand, the inability by the municipality to provide protection against criminal activities that victimise the operators, on the other, the *laissez-faire* nature of the activity puts at risk of accidents, not only the operators, but also their passengers, which compromises the achievement of the target 11.2 of the SDGs, of a safe, and sustainable transport system, since the affordability and accessibility elements seem to be in place and granted. These risks are at the heart of all the criticism of the activity.

The reality has shown that some of the recommendations from Cervero (2000) of aspects to incorporate in policies for the sector, the municipality of Nacala-Porto (i) has not established criteria for market entry, thus sustaining the status of a *laissez-faire*, (ii) the pricing rules have not been established, (iii) service characteristics have not been defined, and (iv) fitness standards for the services provision are yet to be established. In addition, by looking at the framework of recommendations by the SDGs, applicable to the paratransit sector, the municipality is yet to make some steps to meet those recommendations: (i) finding adequate and sustainable sources of financing for urban public transport development, (ii) establishing a fare policy that brings fairness for both the operators (in terms of cost recovery), while granting affordable fares for the passengers, and (iii) ensuring a functional law enforcement force.

Given this scenario, there are some recommendations of aspects that the municipal intervenient Nacala-Porto could consider:

1) Establishing a systematic and consistent driver training services, covering the essentials of the traffic law, and other road safety topics, prior to issuing a licence. This will make the licence a true representation of preparedness for driving on municipality roads, and safely transporting their passengers.

2) Strengthen the law enforcement services, and more consistently penalise any violation of minimum requirements for motorcycles to be on the roads. Safety should be the foremost objective of the municipal government with regards to public transportation. This is

established in the continental and global policies and agreements, to which Mozambique is signatory. As stated by the Transport Policy Framework from the AU, and reinforced by the SDG Target 11.2, “by 2030” countries should “provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety notably by expanding public transport with special attention to the needs of those in vulnerable situation, women, and children, persons with disabilities and older persons” (Shelley & Chatelin, 2016:35).

3) Support the already existing local association, to act as a true representation of the moto-taxi drivers. This could entail legal recognition (through publication in the national Gazette), implementation of campaigns for adherence to the association by the moto-taxi drivers across all moto-taxi ranks of the municipality. Alternatively, incentivizing the elevation of the rank-level structures into an association that is truly owned by the operators, could be an option.

Finally, moto-taxi is a common movement in developing countries. Examples of such emerging innovations are vast with common features that countries can learn from, and help guide and inspire their own processes of regulation. On the other hand, it is important to recognize that each urban context has its own peculiarities that need to be considered, based on specific political economic context, and site-specific goals.

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APPENDIX 1: DETAILED CONCEPTUAL FRAMEWORK

Thematic Construct	Definition	Author	Summary of units of measure within constructs	Research design	Interview questions
Regulatory Reforms	**Quality and Safety Regulations:** This is a set of regulations that intend to ensure safety of moto-taxi drivers and passengers, by reducing the number of accidents as well as the magnitude of the injuries.	Cervero (2000) and Thakur et al (2020)	Number of elements included in the regulations as minimum standards to ensure safety of the devices, compared to those raised by literature	Semi-Structured interviews to understand the opinions qualitative and document review to see the wording and detail of the rules and regulations	● How does the municipality see moto-taxi in terms of safety? ● What are the minimum requirements for new operators to enter the market? ● What are the minimum requirements for the operators in general to be able to circulate on the roads and implement their activities? ● What measures have been taken to ensure safety within this form of public transportation? ● Are there any formal or informal organisations of the moto-taxi drivers? Which form of organisation is that, and how do these operate? ● How does the municipality view these forms of moto-taxi driver organisations? ● Are there any law enforcement processes implemented by the municipality for the moto-taxi? ● How did you acquire your current knowledge of traffic legislation? ● If you look at most of the moto-taxi drivers, what do you think is their age band? ● Do you know of any organisation/association of moto-taxi drivers? If yes: o Do you know how long it was created? o Was the creation of this association/organisation been supported/incentivized by the local government?

Thematic Construct	Definition	Author	Summary of units of measure within constructs	Research design	Interview questions
					○ How do you see the role of this association/organisation? ● Are there any risks associated with this activity? If yes, please describe in detail: ○ How do you think those risks could be reduced? ○ What is being done now to reduce the risks, by the various intervenient? ○ (in case respondent has mentioned accidents) What do you think are the reasons for the accidents? ○ (in case respondent has mentioned accidents) What do you think can be done specifically to reduce the accidents? ● Have you ever been approached by any law enforcement agent? If yes, describe: ○ Are there any minimal requirements for operating in this industry? ○ What is your opinion around the relevance of these requirements? ○ Does your vehicle comply with those minimum requirements?
	Environmental regulation: These refer to the set of rules and regulations at the urban area, to control pollution and GHG emission, but setting minimum standards of the condition of the vehicles, when these should be timed-out, or other forms of controls	Cervero (2000) and Thakur et al (2020)	Clarity in establishing emission limits and minimum mechanical conditions or age of vehicle to control emission of GHG. This should compare to policies	Semi-Structured interviews to understand the opinions qualitative and document review to see the wording and detail of the rules and regulations	● How does the municipality regulations ensure the moto-taxis are operating within the national, regional and global policies around emission of GHG? ● Have you heard of any regulations to control the emission of smoke and control other forms of environmental hazards for moto-taxi drivers?

Thematic Construct	Definition	Author	Summary of units of measure within constructs	Research design	Interview questions
			in similar municipalities in developing countries		
	Quantity Regulation: This is related to all the rules and regulations that control the number of operators, and tend to control where these are allocated for a balanced provision of services across the various points of the municipality	Cervero (2000) and Thakur et al (2020)	Regulation should establish a clear procedure for determination of allocation of vehicles across different point of the city, and compared to similar calculation in other countries	Semi-Structured interviews to understand the opinions qualitative and document review to see the wording and detail of the rules and regulations	● Are there any regulations around limits in the number of operators and how these should be distributed across the city?
	Economic Regulation (Pricing): All those policies and regulations that aim to control fares, fair compensation to all the operators across the entire urban transportation system, and make the activity economically sustainable for the operators, while at the same time affordable for the users.	Cervero (2000) and Thakur et al (2020)	Policy or regulation should state clearly how calculations of fares are done for this activity	Semi-Structured interviews to understand the opinions qualitative and document review to see the wording and detail of the rules and regulations	● What are the existing policies around taxi fares across the various forms of public transport? Do these apply to the moto-taxi? ● What are the overall purposes of the fare control policies?
	Technological Regulation: Rules that intend to control the status of the vehicles in terms of technology and status of obsolescence.	Cervero (2000) and Thakur et al (2020)	Policy should state what minimum required vehicle conditions should be applied in each of the points of the city.	Semi-Structured interviews to understand the opinions qualitative and document review to see the wording and detail of the rules and regulations	● Technology-wise, what are the standards established by the municipality for the vehicles? ● Are there policies for an inventory of types of vehicles that are being used in the municipality? Who creates and keeps those inventories?

Thematic Construct	Definition	Author	Summary of units of measure within constructs	Research design	Interview questions
Management and Organisational Options	Organisations (formal or informal), of operators, that help organise the activity, facilitate dialogue with government, and/or help set rules and norms for the group, and help (perhaps) support in reinforcement of the applicable strategies, policies and regulations.	Cervero (2000)	Participants should confirm whether they are aware of any organisations of moto-taxi drivers in the municipality	Semi-structured interview with the participants	● Are taxi drivers in Nacala organised in any form? ● What role does the organisation play, and how does that benefit the drivers, the local government and the moto-taxi users? ● Is the municipality aware of moto-taxi drivers organisations? o If yes, how does that serve the purposes of the municipality? o How has the municipality interacted with those moto-taxi driver organisations?
Financial Incentives	Set of measures implemented or reinforced by government to support the implementation and adherence to the regulations. These can take the form of credit access or other financial incentives, such as fee exemption, subsidies, or even efforts in the form of PPPs.	Cervero (2000)	Participants should confirm whether they receive (operators), or have provided (the municipality), any form of incentives	Semi-Structured Interview with participants	● How do people normally acquire motorcycles? ● What are the challenges facing the moto-taxi activity? ● What kind of support (if any) does the municipality provide to the moto-taxi drivers? ● How does this relate to the overall mandate of the municipality in providing urban transport for the citizens? ● What processes (if any), has the municipality implemented to regulate this new activity? ● What are the pillars of the municipal public transport policy, framework and strategies?
Infrastructure Improvement and Traffic Management	These are sets of measures to provide adequate infrastructure for the informal transport (on-street and/or off-street).	Cervero (2000)	Observe the various ranks and roads if they have been	Non-participant observation of the moto-taxi ranks and	● Observe whether there are specific terminals for moto-taxi, dedicated lanes for some forms of paid transport

Thematic Construct	Definition	Author	Summary of units of measure within constructs	Research design	Interview questions
			subject to any for of improvements	the municipal roads.	
Training	As part of regularisation, the framework recommends trainings in the existing legislation, and also for adoption of safe driving behaviours (and other relevant matters)	Cervero (2000)	Participants should conform whether trainings for moto-taxi operators have been held.	Semi-Structured Interview with participants	● What are the minimum requirements for moto-taxis to operate? ● What measures have been taken to ensure safety within this form of public transportation? ● What kind of support (if any) does the municipality provide to the moto-taxi drivers? ● How did you acquire you current knowledge of the traffic legislation?

APPENDIX 2: SNAPSHOT OF THE STANCE OF PUBLIC ROADS, TRANSPORT, AND URBAN TRANSIT OF NACALA-PORTO



Postura Sobre Vias Públicas, Transportes e Trânsito Urbano

Capitulo I

Vias Públicas e Sua Conservação

Secção I

Limpeza, Conservação e Publicidade nas Vias Públicas

Artigo 1

(Legislação Aplicável e Conceito de Via Pública)

1. Para efeitos desta matéria, foram tomados como base normativa o Regulamento de Transporte em Automóveis, o Código de Estrada e Regulamentos análogos de outros Municípios.
2. Nesta Postura, consideram-se vias públicas todos os espaços ou locais abertos, nomeadamente as ruas, estradas e seus passeios ou bermas, jardins públicos, praças e largos e outros locais cuja limpeza e manutenção são da responsabilidade directa do Conselho Municipal.

Artigo 2

(Limpeza e Conservação das Vias Públicas)

1. Nos termos da presente Postura, é dever do Conselho Municipal, proceder à limpeza e remoção do lixo ou resíduos sólidos em todos os locais considerados vias públicas.

2. De igual modo, é responsabilidade do Conselho Municipal realizar ou promover a realização das obras de conservação e manutenção das infra-estruturais de todos os locais considerados vias públicas.

Artigo 3

APPENDIX 3: INTERVIEW GUIDES

QUESTIONS FOR THE MUNICIPALITY

SEMI-STRUCTURED INTERVIEW GUIDE

General Questions

- How do you describe the emergence of the moto-taxi in Nacala-Porto?
- How does this relate to the overall mandate of the municipality in providing urban transport for the citizens?
- What processes (if any), has the municipality implemented to regulate this new activity?
- What are the pillars of the municipal public transport policy, framework and strategies?
- How do those align with existing and applicable global, regional and national strategies and policies for the sector, such as the Sustainable Development Goals?
- Is the municipality aware of moto-taxi drivers organisations?
    - If yes, how does that serve the purposes of the municipality?
    - How has the municipality interacted with those moto-taxi driver organisations?
- What kind of support (if any) does the municipality provide to the moto-taxi drivers?

Safety and Quality Regulations

- What are the minimum requirements for moto-taxis to operate?
- What measures have been taken to ensure safety within this form of public transportation?
- Are there any law enforcement processes implemented by the municipality for the moto-taxi?

Environmental Regulation

- How does the municipality regulations ensure the moto-taxis are operating within the national, regional and global policies around emission of GHG?

Quantity Regulation

- Are there any regulations around limits in the number of operators and how these should be distributed across the city?

Economic Regulation

- What are the existing policies around taxi fares across the various forms of public transport? Do these apply to the moto-taxi?
- What are the overall purposes of the fare control policies?

Technological Regulation

- Technology-wise, what are the standards established by the municipality for the vehicles?
- Are there policies for an inventory of types of vehicles that are being used in the municipality? Who creates and keeps those inventories?

QUESTIONS FOR THE MOTO-TAXI OPERATORS

SEMI-STRUCTURED INTERVIEW GUIDE

Participant Code:_____

General Questions

- For how long have you been engaged in this form of activity?
- Describe the facts and motivations that were behind your interest in entering this sector?
- How did you acquire your motorcycle?
- Has the municipality implemented any activities/ intervention to regularise the moto-taxi activity? If yes, describe in detail.
- What are the challenges facing the moto-taxi activity?

Safety and Quality Regulations

- How did you acquire you current knowledge of the traffic legislation?
- If you look at most of the moto-taxi drivers, what do you think is their age band?
- Do you know of any organization/association of moto-taxi drivers? If yes:
    - Do you know how long was it created?
    - Was the creation of this association/organization been supported/incentivized by the local government?
    - How do you see the role of this association/organization?
- Are there any risks associated with this activity? If yes, please describe in detail:
    - How do you think those risks could be reduced?
    - What is being done now to reduce the risks, by the various intervenient?
    - (in case respondent has mentioned accidents) What do you think are the reasons for the accidents?
    - (in case respondent has mentioned accidents) What do you think can be done specifically to reduce the accidents?
- Have you ever been approached by any law enforcement agent? If yes, describe:
    - Are there any minimal requirements for operating in this industry?
    - What is your opinion around the relevance of these requirements?
    - Does your vehicle comply with those minimum requirements?

Environmental Regulation

- Have you heard of any regulations to control the emission of smoke and control other forms of environmental hazards for moto-taxi drivers?

Quantity Regulation

- Are there any regulations around limits in the number of operators and how these should be distributed across the city?

Economic Regulation

- Are there any forms of control of taxi fares across the various forms of public transport? Do these apply to the moto-taxi?

Technological Regulation

- Are you aware of any rules of where you should operate with that type of motorcycle?

QUESTIONS FOR THE REPRESENTATIVE OF THE MOTO-TAXI ASSOCIATION

SEMI-STRUCTURED INTERVIEW GUIDE

General Questions

- When do you estimate the moto-taxi activity started in Nacala-Porto?
- Describe the facts and motivations that normally attract people into the moto-taxi industry?
- How do people normally acquire motorcycles?
- Has the municipality implemented any activities/ intervention to regularise the moto-taxi activity? If yes, describe in detail.
- What are the challenges facing the moto-taxi activity?
- Has this organization ever been approached by the municipality for discussion of rules and regulations applicable to the industry?

Safety and Quality Regulations

- What are the minimum requirements for one to enter this industry?
- How do you assess the moto-taxi drivers in terms of knowledge of traffic code/legislation?
- If you look at most of the moto-taxi drivers, what do you think is their age band?
- Was the creation of this association/organization been supported/incentivized by the local government?
- What is the role of the organization with regards to government and operators?
- Are there any risks associated with the moto-taxi activity? If yes, please describe in detail:
    - How do you think those risks could be reduced?
- What is the role of law enforcement agent in relation to the moto-taxi activity?

Environmental Regulation

- Have you heard of any regulations to control the emission of smoke and control other forms of environmental hazards for moto-taxi drivers?

Quantity Regulation

- Are there any regulations around limits in the number of operators and how these should be distributed across the city?

Economic Regulation

- Are there any forms of control of taxi fares across the various forms of public transport? Do these apply to the moto-taxi?

Technological Regulation

- Are you aware of any rules of where you should operate with that type of motorcycle?

QUESTIONS FOR THE MOTO-TAXI USERS

SEMI-STRUCTURED INTERVIEW GUIDE

Participant Code:_____

General Questions

- How often do you use moto-taxi?
- For what purpose do you normally use the moto-taxi services?
- The times when you used the moto-taxi, what made you use that form of transportation, instead of other forms of transportation?

Safety and Quality Regulations

- How do you see the moto-taxi in terms of safety?
- Are there any additional measures that you think could be implemented to make the moto-taxi safer than it is?

Environmental Regulation

- Whar is for you the overall condition of the most common motorcycles that do taxi?
- Is there anything that could be improved?

Quantity Regulation

- How do you rate the number of moto-taxi in the city?
- How has the number been changing over the years?
- From the consumer point of view, how do you think the number of moto-taxis benefit you?

Economic Regulation

- Are there any forms of control of taxi fares across the various forms of public transport? Do these apply to the moto-taxi?

Technological Regulation

- Are you aware of any rules of where you should operate with that type of motorcycle?

APPENDIX 4: PARTICIPANT CONSENT FORM

Participant Information Sheet (PIS)

Good day

My name is **Caximo Paulino Nuno Caximo**. I am a Masters student at the School of Governance at the University of the Witwatersrand, Johannesburg. My supervisor is **Dr Caryn Abrahams**. I am conducting research to **explore the critical elements of the process for regularising the moto-taxi by the municipality of Nacala-Porto**.

I am inviting you to take part in an interview, which will last not longer than 30 minutes. If you decide to take part, your participation in this research study will last about 30 minutes. The interview activity will take place here and now, or feel free to schedule another time that best suits your availability.

With your permission, I would like to register your responses on my notebook. As a researcher, the information you provide will be stored in a secure space on a google drive account associated with my school account. This will be kept for 5 years, just in case the university decides to verify the accuracy of the data/report. After that period, the information will be deleted. This applies to transcriptions of your responses, photographs and/or voice recordings taken as part of this study. The hard copies of signed consent forms will be scanned and stored on google drive, while the hard copies will be destroyed within a month after data collection. Only the researcher and authorized persons at the University of Witwatersrand will have access to the electronic data.

During the research activity, I will need to ask for some personal information about you, including your name, age, and gender. Please note that the name will only be written on the consent form, and any other information will only have a code assigned to it.

The interview will be confidential, and preferably conducted far from other people. When I share the results of the research study, I will not include your name or anything else that could identify you. With your permission, I may, however, quote interesting statements you share, just to make a case, but only if you allow. Other researchers from the University may use the data collected from this research study, but your name and any personal information will not be used or passed on, as the response notes will have a code of the respondent and not the name.

Your participation in this interview is completely voluntary. You do not have to take part if you are not willing to. Also, feel free to stop the interview at any time if you are not willing to continue. You do not have to answer any questions if you do not want to. You will not get any direct benefits (or paid)if you choose to join the research study. You will not lose any services, benefits or rights you would normally have if you decide not to participate in this interview. Taking part in the research study will not cost you anything.

The risks for this research study are no more than what happens in everyday life / some of the questions asked may make you feel sad or upset. If this happens, I will stop the interview and continue another time.

This research study will be written up as a research report. The report will be available on the university library website. If you would like to receive a summary of this report, I will be happy to send it to you.

If you have any questions during or afterwards about this research study, feel free to contact me or my supervisor on the details listed below. If you have any concerns or complaints about the ethical procedures of this research study, you are welcome to contact the University Human Research Ethics Committee (Non-Medical), telephone +27(0) 11 717 1408, email hrecnon-medical@wits.ac.za.

Yours sincerely,

Researcher:
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Supervisor:
Caryn Abrahams, caryn.Abrahams@wits.ac.za , +27 721484851

Consent Form

Code of Participant: _____

Title of project: EXPLORING THE CRITICAL ELEMENTS OF THE PROCESS FOR REGULARISING MOTO-TAXI BY THE MUNICIPALITY OF NACALA-PORTO

Name of researcher

I, …….., agree to participate in this research project.

I agree to the following:

(Please circle the relevant options below)

The research study was explained to me. I understand what this study is about.	YES	NO
I understand that my participation is voluntary	YES	NO
I agree that the interview activity may be documented	YES	NO
I agree that direct quotations from my interview may be used by the researcher in their research report	YES	NO
I agree that my participation will remain anonymous (my name or other identifying data will not be used by the researcher in their research report)	YES	NO
I agree that other researchers may use the information I provide in my interview (depending on their own ethics clearance being obtained) but my name and any personal information will not be used or passed on	YES	NO

…… (signature)
…… (name of participant)
…….(Age of participant)
…….(Sex of participant)
…… (date)

…… (signature)
…… (name of researcher)
…… (date)