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Challenges Associated with Informal Motorcycle Parking Spaces in urban areas The case of Sinza and Saranga ward.

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ABSTRACT

Cities in Tanzania have been experiencing rapid increase in commercial motorcycles with young people grabbing an opportunity to in a wake of raising unemployment. This has been associated with creation of informal motorcycles parking spaces with existing urban planning not providing specific standards for commercial motorcycle parking spaces.

Goal and Objectives

The study aimed to explore the challenges of informal motorcycle parking spaces in urban areas.

Methodology

Structured interviews allowed the collection of statistical data and opinions of motorcyclists on their daily operations of motorcycles. This was conducted with motorcycle drivers and users to get qualitative information. Interviews were used to collect data on criteria used in locating informal parking, activities or land uses that attract motorcyclists to locate parking, operation and management rules on parking, parking challenges facing motorcyclists, services needed at each motorcycle parking, tenure and ownership of motorcycle parking, potential areas for motorcycle parking, acquisition of area for locating motorcycle parking, and the trend of motorcycle informal parking space uses. The observation method was used to identify different locations of motorcycle parking spaces and users of motorcycles at different time intervals.

Results

The results indicates that informal motorcycle parking spaces in urban areas has been associated with a wide range of challenges such as urban crimes, Lack of formal parking spaces, Lack of motorcycle infrastructure, Encroachment of road reserves, Encroachment of private spaces, Road accidents and Environmental deterioration. This research recommends for integration of motorcycles in formal transport system. Again, geospatial techniques should be used to establish the suitable location for motorcycle parking spaces. The study finally recommends the inclusion of parking spaces in land use plans to ensure sustainable transport.

Keywords:

Informal Parking Spaces, Challenges, Motorcycles

1. BACKGROUND OF THE STUDY

Informal public transport is used by the majority of low-income people (Guillen, Ishida, & Okamoto, 2012). The modes may follow some illegitimate practices, but they do it to become profitable, which in turn help them provide the much-needed mobility services (Kumar, Singh, Ghate, Pal, & Wilson, 2016). Motorcycle transport is used as an alternative transport in urban areas. At the same time, the emergence of informal transport operations resulted in road safety issues creating a debate on its sustainability (Ehebrecht, Heinrichs, and Lenz, 2018). WHO, 2018 Operators of informal motorcycle transport are both skilled and non-skilled people (Arosanyin, Olowosulu, and Oyeyemi 2011).

Motorcycle transport needs to be part of the urban transportation system where policies need to recognize this mode of transport (Kemajou, Jaligot, Bosch, & Chenal, 2019). Informal transport has little recognition by policymakers and urban planners (Kumar, Singh, Ghate, Pal, & Wilson, 2016). Lack of research and knowledge on informal transport has created a negative attitude by government authorities who see informal transport as dangerous, not safe, polluter of the environment and contributing to air pollution (Kumar, Singh, Ghate, Pal, & Wilson, 2016). Majority of motorcycle operators or drivers are the youth including school leavers (Ogunrinola, 2011). The operation of motorcycle acts as a source of employment and income to people especially youth in urban areas (Ogunrinola, 2011).

The commercial motorcycle sector is dominated by youth with limited training, low level of education or training and low economic security (NCRC, 2018). The operation of motorcycle transport must ensure safety of operators and users or passengers by creating a mechanism to regulate it (Ogunrinola, 2011). There is a need to cater for the mobility needs of the population (Kumar, Singh, Ghate, Pal, & Wilson, 2016).

Improvement in motorcycle transport can widen opportunities for employment and income generation (Arosanyin, Olowosulu, and Oyeyemi 2011). In Developing countries, people use informal transport for income generation, employment, and mobility (Sengers, and Raven, 2014). Among the reasons for a growing number of motorcycles are convenience to users, door to door services (unlike other modes), time saving, ability to save in low populated areas, flexibility in travel routes, accessibility in peri-urban areas, and provision of direct link to other modes of transport (Kumar, 2011).

In African cities, poor performance and inadequacy of conventional public transport attracted non-conventional transport services such as commercial motorcycles (Kumar, 2011). In Southern and East Asia, there is ownership and use of motorcycles (unlike in Africa where motorcycles are used as commercial services (Kumar, 2011). For the past decade, there has been a growing use of motorcycles as a mode of transport in urban and rural areas (Kumar, 2011). The growth of commercial motorcycles has been

associated with road accidents, traffic management problems, noise and pollution in general (**Kumar, 2011**).

In the East Africa region, Rwanda, Kenya, Uganda, Burundi, and Tanzania have experienced the growing numbers of motorcycles in both rural and urban areas (**Salum, Kitali, Bwire, Sando, & Pryanka, 2019**). Motorcycles emerged as the new mode of transport in East Africa for the past decade and Tanzania experienced a rise in the number of motorcycles (**Salum, Kitali, Bwire, Sando, & Pryanka, 2019**). This started in 2009 when the government licensed two-wheeled motorcycles and tricycles to be used as public transport (**Ngemera, 2017**).

Motorcycle transport is increasing in East Africa due to higher demand and ability to meet the services especially door to door services (**ACAP, 2015**). The rapid exponential growth of motorcycle used for public transportation in the past decades is not the result of plans to improve mobility needs but rather an indigenous response to increasing demand and commercial opportunity for motorcyclists (**Kumar, 2011**). The term Boda Boda originated in Uganda in 1960s. The motorcycle transport locally known as Boda Boda usually operates in places where the conventional transport services are uneconomical or places where physically it is impossible for other means of transport to operate were Motorcycle transport plays a key role as a feeder transport in both urban and rural areas (**ACAP, 2015**). By 2013, there were a total of 10,036 registered motorcycles in Tanzania while Dar es Salaam alone accounted for 4,432 motorcycles (**ACAP, 2015**).

In Tanzania, motorcycle transport is widely used in urban areas but there is no policy statement concerning motorcycles in ensuring sustainable mobility. Motorcycles play a crucial role in improving mobility in Dar es Salaam city as it allows door-to-door services (**Salum, Kitali, Bwire, Sando, & Pryanka, 2019**). The number of motorcycles increased to 392,169 from in Dar es Salaam city where more than 5 million people live. Most of these motorcycles are used as an alternative to public transportation (**Salum, Kitali, Bwire, Sando, & Pryanka, 2019**). This increase in number of motorcycles in the Dar es Salaam city implies space for parking. Thus, the lack of basic facilities in parking areas for motorcycles creates challenges of safety to road users (**Luambano, 2020**).

There is a significant literature on motorcycles and road safety. Experience indicates that motorcycles do not follow the first in first out in road junctions (**EASTS, 2003**). Different countries have a different composition of traffic on the road (**EASTS, 2003**). Motorcycles dominate the traffic flows which indicate the dominance of motorcycle transport (**EASTS, 2003**). Poor safety records hinder the development of motorcycles as a mode of transport (**EASTS, 2003**). The motorcycle is seen as one of the more hazardous modes of travel (**EASTS, 2003**). Regular complains for motorcyclist involvement in crimes is high with people reporting being attacked by motorcyclists (**NCRC, 2018**).

Commercial motorcycle operation in Tanzania is associated with various challenges including low level of compliance with regulations, long working hours, poor relationship between motorcyclists and government officials, lack of formal contract between motorcycle riders and owners (Luambano, 2020). The rapid increase of motorcycle in limited capacity of road infrastructures has raised the risk for accidents, injuries and deaths in developing countries (Francis, Moshirob, Yngve, & Hansselberg, 2021). In Dar es Salam city, there is lack of basic facilities for motorcycle and lack of parking spaces for the motorcycles (Luambano, 2020).

The operation of informal motorcycle transport resulted in the creation of informal motorcycle parking spaces. Empirical studies indicate that data on the spatial pattern of micro-mobility services have been used in finding the solution to problems related to vehicle parking in urban areas (García-Palomares, 2021). There are several policies, laws, and guidelines related to transportation and land use in Tanzania. These include the National Transport policy 2003, the urban Planning Act of 2007, the National Human Settlement Development Policy 2000, the National Road Safety Policy 2003, and Urban Planning and Design space standard 2018. The policy provides guidance for land use planning and transport planning in urban areas (United Republic of Tanzania, 2003).

According to Section 4(1) Subsection (a) of *the Urban Planning Act No. 08 of 2007*, the objective of urban planning is to facilitate efficient and orderly management of land use. Also Section 4(1) Subsection (c) explains that the objective of urban planning is to promote sustainable land use practice (United Republic of Tanzania, 2007). The Urban Planning Act also stipulates the responsibilities of planning authorities. The National Human Settlement Development Policy of 2002 aims at promoting the development of human settlements, which are sustainable through improving the provision of infrastructures and services for sustainable development. This includes the provision of parking facilities within the settlements (United Republic of Tanzania, 2000).

The National Road Safety Policy Directions state that the government shall influence implementing agencies to conduct good land use planning and urban settlement patterns to discourage the habit of parking vehicles along road carriage ways in urban centers (United Republic of Tanzania, 2009). The policy encourages construction and use of parking facilities in built-up areas. In road junctions and intersections, vehicles are required to be parked far beyond intersection sights to avoid visual obstruction and risk of accident during turning movements. The policy also recognizes the importance of land use planning and the provision of parking facilities (United Republic of Tanzania, 2009). The urban planning space standards of 2018 provide the space standard for different uses and parking standards. However, there is no provision for space standards for motorcycle transport (United Republic of Tanzania, 2018).

Table 2. 1: Space standards for parking lots

Type of car	Angle of parking	area
Buses and coaches	-	40–50m ²
Car parking	a) in line parking	25–30m ²
	b) in 45 degrees	20–30m ²
	c) in 90 degrees	20–25m ²
Lorry parking	a) in 90 degrees	90–120m ²
	b) in 45 degrees	135–145m ²

URT, 2018

There is no provision of space standard for motorcycle operations in urban areas. This indicates that there is no place planned for motorcycles in urban areas thus all parking spaces available are informally occupied in areas planned for other uses. Vehicle parking is one of the new forms of conflict in cities (**García-Palomares, 2021**). Motorcycles or scooters are often found on the sidewalks or simply left on those sidewalks hindering other users from using the spaces especially vulnerable groups (**García-Palomares, 2021**).

In Tanzania, motorcycle parking spaces are not included in formal settlement plans, hence there is a need to figure out and identify the spatial location for all informal motorcycle parking spaces. The rapid growth of commercial motorcycle transport in urban area has been associated with growing road safety issues. In developing countries, the motorcycle transport has a significant contribution on road fatalities and injuries. More researchers have focused on linking motorcycle transport with road safety in urban areas. Furthermore, there is lack of literatures the challenges associated with informal motorcycle parking spaces and how they relate to urban safety.

METHODOLOGY

The study used Ubungo Municipality as a case study where an in-depth analysis of informal motorcycle parking spaces was done; Structured interviews were used to collect primary data from motorcycle operators or drivers in each ward. The data about motorcycle operation, access to spaces, parking management and criteria for selecting an area for motorcycle were collected through structured interviews. Structured interviews allowed the collection of statistical data and opinions of motorcyclists on their daily operations of motorcycles. This was conducted with motorcycle drivers and users to get qualitative information. Interviews were used to collect data on criteria used in locating informal parking, activities or land uses that attract motorcyclists to locate parking, operation and management rules on parking, parking challenges facing motorcyclists, services needed at each motorcycle parking, tenure and ownership of motorcycle parking, potential areas for motorcycle parking, acquisition of area for locating motorcycle parking, and the trend of motorcycle informal parking space uses.

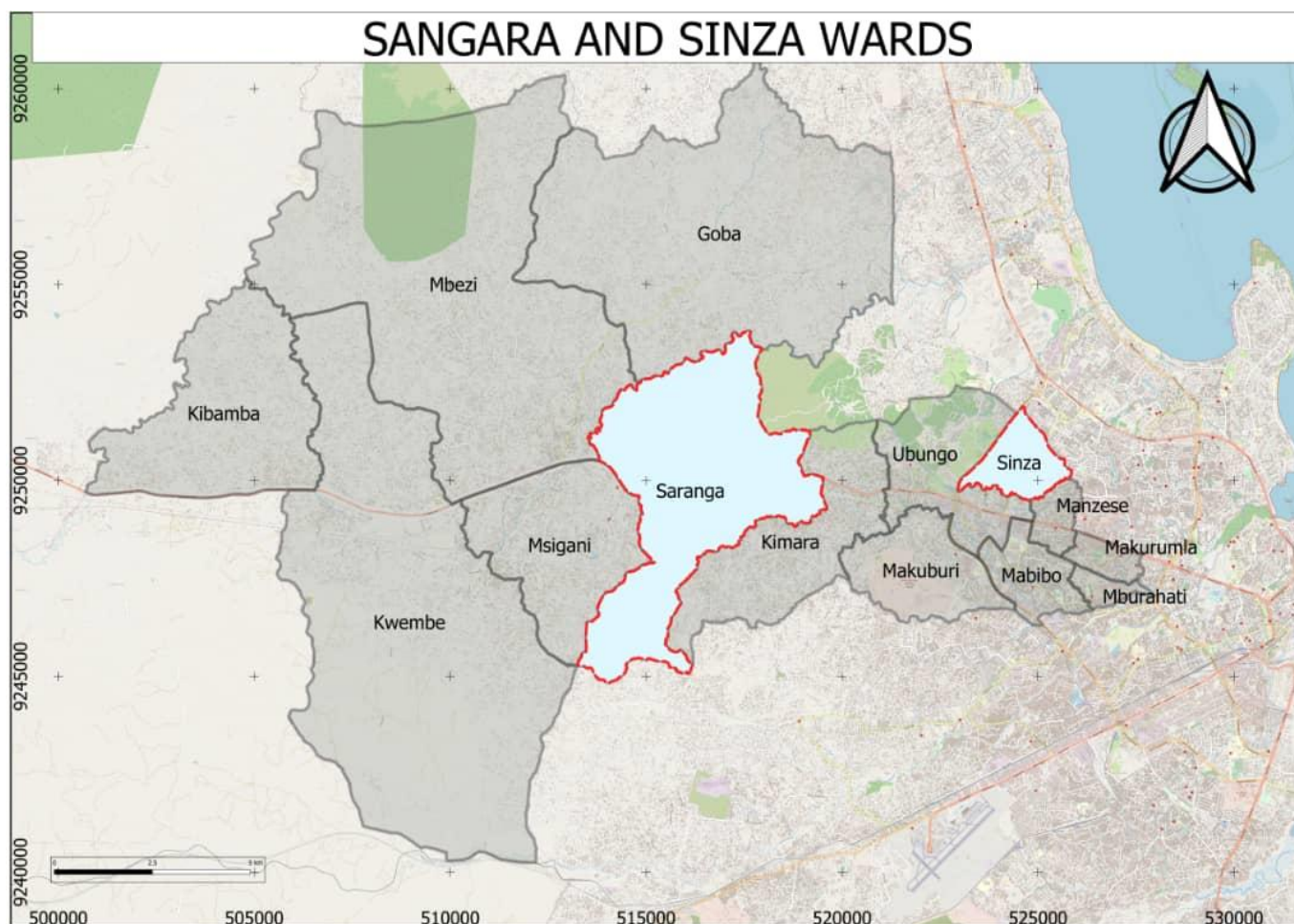


Figure 1. The location of Saranga and Sinza ward

The observation method was used to identify different locations of motorcycle parking spaces and users of motorcycles at different time intervals. To do this, the researcher agreed with the arguments of Thomas (2003), who urged that the observation method can be guided through a set of questions that an investigator attempts to answer. Data on the condition of parking, size of parking, number of motorcycles at each station, surrounding land uses and activities as well as accessibility to parking were collected by the use of the observation method. Digital Cameras and GPS were used to capture the information

2. RESULTS AND DISCUSSION.

The study uncovered that in both Saranga and Sinza wards, motorcycle parking spaces have not been planned. It has been shown that, even though informal motorcycle parking spaces play a vital role in ensuring accessibility of passengers and act as a meeting point between motorcyclists and passengers, their operation poses a wide range of challenges. An interview with motorcyclists indicated that motorcycle operators face a wide range of challenges as indicated in Table 4.18 below.

Table 1: Challenges associated with informal motorcycle parking spaces in Sinza and Saranga wards

Challenge	Sinza			Saranga		
	Response	Total	%	Response	Total	%
1. Lack of formal parking spaces	6	60	10	01	30	3.3
2. Lack of motorcycle infrastructure	3	60	5	05	30	16.6
3. Urban crime	5	60	8.3	03	30	10
4. Encroachment of road reserves	8	60	13.3	05	30	16.6
5. Encroachment of private spaces	11	60	18.3	11	30	36.6
6. Road accidents	8	60	13.3	08	30	26.6
7. Environmental deterioration	3	60	5	05	30	16.6

Source: Author’s construct (2022)

- 1) **Lack of motorcycle infrastructures:** Motorcycles are very small, giving them maneuverability to park anywhere. Motorcycles usually park on pedestrian walkways (Hsu, 2003). The results show that the existing built environment in both Sinza and Saranga wards does not have specific infrastructures for motorcycle operations. The current movements of motorcyclists mix with other traffics as there are no roadways for motorcyclists. Motorcycles or scooters are often found on the sidewalks or simply left on those sidewalks hindering other users from using the spaces especially vulnerable groups (García-Palomares, 2021). This creates traffic conflict for different road users and endangers the safety of motorcycle transport users as well as pedestrians moving in the same space. At the same time, the emergence of informal transport operations resulted in road safety issues creating a debate on its sustainability (Ehebrecht, Heinrichs. and Lenz, 2018).
- 2) **Lack of formal parking spaces for motorcycles:** Motorcycles or scooters are often found on the sidewalk or simply left on those sidewalks hindering other users from using the spaces especially vulnerable groups (García-Palomares, 2021). The results show that the existing built environment in both Sinza and Saranga wards does not have planned spaces for motorcycles. The existing informal motorcycle parking spaces have been established by occupying informally areas with other uses. An interview with Ubungo Municipal Town Planner indicated that currently there are no formal planned areas for motorcycles within the municipal including wards of Saranga and Sinza. It was also said that there are no space standards for motorcycle parking spaces. Motorcycles Park almost everywhere due to their small size that makes them flexible to park anywhere (EASTS, 2003).
- 3) **Enrichment of road reserves:** During site visit and data collection, it was discovered that motorcycle parking spaces have been established on road reserves and pedestrian walkways which create conflict with other road users such as pedestrians. The absence of formal motorcycle parking spaces has resulted in the encroachment of roadways and road reserves that interfere with other uses of road areas posing a challenge on safety of other road users. In areas along Morogoro Road, in

the Saranga ward, there are informal motorcycle parking spaces within the right of way of road while in Sinza ward, motorcyclists have established informal parking spaces within the right of way in Shekilango road and other roads.

- 4) **Encroachment of pedestrian space:** Informal motorcycle parking spaces are created on pedestrian walkways and sidewalks thus interfering with the mobility of the pedestrians. This occurs in most of the areas where motorcyclists park in pedestrian areas. Furthermore, the performance of bus stops is affected due to establishment of informal motorcycle parking spaces around bus stops by displacing passengers as a result of motorcycle occupying spaces.
- 5) **Encroachment of private spaces:** Field visit and observation indicated that in some places informal motorcycle parking spaces have been established on private plots without the consent of plot owners. This can interfere with the interest of plot owners. In Sinza ward, informal motorcycle parking spaces have been established on restaurants outdoor areas, bar outdoor areas and hospital areas. This also creates conflicts with land owners as they also disturb the landscape of private plots. Establishment of motorcycle parking spaces in private properties has been blamed for attracting crimes as it welcomes strangers around those places.
- 6) **Urban Crimes:** An interview with Mtaa leaders in Sinza and Saranga wards revealed that motorcycles have been associated with growing criminal activities against people in residential neighborhoods. The existence of informal motorcycles in Sinza and Saranga wards has created a new form of crime targeting residents with the use of motorcycles to reach targeted area. They tend to commit crime and escape from the area before the victim gets help from security officers. In Saranga ward, due to informality of the neighborhoods, the existence of narrow streets provides opportunities for motorcyclists to commit crimes. Furthermore, the establishment of informal motorcycle parking spaces near or within bus stops in Sinza area has attracted crime involving motorcyclists, especially targeting passengers who are waiting for Dala Dala transport and those who are dropping from buses. Generally, the establishment of informal motorcycle parking spaces in areas that have not been planned for has opened up for new challenges of crime in neighborhoods.
- 7) **Roads' Accidents:** It was observed and discovered through field visit and official interview that the informal motorcycle parking spaces located on bus stops, zebra crossings and along the road interfere with traffic flow and they hinder visibility which creates insecurity and risk of accidents. Parking of motorcycles on road hinders visibility to car drivers which also increases the risk of road accidents. This is because most of informal parking spaces have been established in areas where there is high concentration of pedestrians such as bus stops and zebra crossings.
- 8) **Lack of supporting services like toilets:** There is also lack of facilities like parking shades, toilets and signage showing parking for motorcycle in all existing parking areas (Luambano, 2020). In

Kinondoni, there were no facilities like shades, toilets and others for motorcycle parking because all parking spaces for motorcycles are temporary (Luambano, 2020).

3. CONCLUSION

Finally, the establishment of informal motorcycle parking spaces has been associated with environmental deterioration where some informal motorcycle parking spaces have been established on green areas which destroy the appearance of the area. This has been observed along in road reserve areas like Sam Nujoma Road, Shekilango Road and parts of Morogoro Road in Saranga ward. The results further indicates that informal motorcycle parking spaces in urban areas has been associated with wide range of challenges such as urban crimes, Lack of formal parking spaces, Lack of motorcycle infrastructure, Encroachment of road reserves, Encroachment of private spaces, Road accidents and Environmental deterioration. This research recommends for integration of motorcycles in formal transport system. Again, geospatial techniques should be used to establish the suitable location for motorcycle parking spaces.

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7. KEY TERMS AND DEFINITIONS

Motorcycle parking spaces: This refers to parking spaces used by two-wheeled motorcycles in urban areas.

Informal Parking spaces: This refers to motorcycle parking spaces that have been established informally in areas planned for other land uses contrary to existing urban plans. This includes informal motorcycle parking spaces used by two-wheeled commercial motorcycles in urban areas.

Motorcycles: These are two-wheeled motorcycles used for commercial tax transportation in urban areas. They are also popularly known as Bodaboda.