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Assessing the impact of tech-enabled urban mobility

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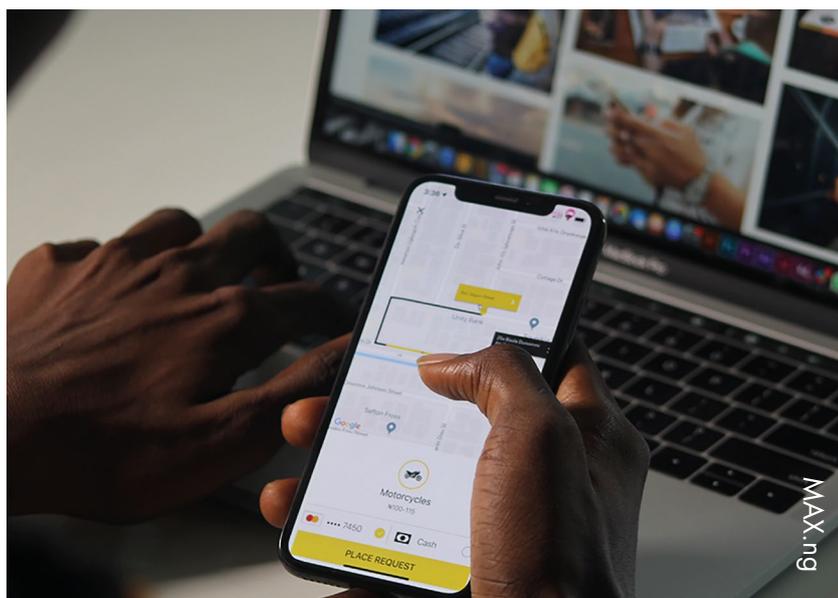


Introduction

Mobility is a cornerstone of modern economies and a pressing development challenge for emerging markets, since its absence limits economic growth and local productivity, and causes significant congestion and environmental damage. When present, mobility enables people to access goods and services, education and employment opportunities, health and social well-being, and can enhance overall quality of life. It's also a key enabler of economic development, creating opportunities across the market through the efficient movement of people and goods. On the other hand, unavailable, inefficient, and unsafe mobility options can slow economic and human development, and damage the natural environment.

In the past decade, [Shell Foundation](#) has supported startups that meet mobility needs across the world, providing patient capital and enterprise development support. Its [portfolio](#) includes technologies and business models connecting isolated communities with goods and services, lower cost and cleaner global freight solutions, and mobility enterprises focused on improving the quality, safety, and cost of transport in urban environments. While many governments and multilateral development institutions have made sustainable transport a major research and advocacy topic, this has yet to translate into significant funding (soft, equity, grant) from the broader impact investment community to private enterprises solving mobility challenges in emerging markets.

Shell Foundation commissioned [BFA Global](#) to execute this study to better understand and document the range of impacts sustainable mobility enterprises have on society and the environment, with a particular focus on drivers and passengers of two Shell Foundation-funded motorcycle taxi ride-hailing services – **SafeBoda** in East Africa and **Metro Africa Express (MAX)** in Nigeria. In commissioning this study, Shell Foundation expects to establish an impact research methodology that could be replicated across the mobility portfolio, and generate interest in the sector among the impact investing community.



Shell Foundation funded motorcycle taxi ride-hailing services – **SafeBoda in East Africa and MAX in Nigeria.**



mobility enables people to access goods and services, education and employment opportunities, health and social well-being, and can enhance overall quality of life.

Research Approach

BFA Global approached this research in multiple stages:



Desk research – This phase included conversations with Shell Foundation portfolio companies, a review of internal consumer / driver research documents, and a review of publicly-available mobility-industry documents and relevant local data (i.e., transportation, pollution, and accident studies) to serve as a baseline for comparing for the portfolio companies' services.



Investor interviews – Given Shell Foundation's overall objective to catalyze funding for mobility enterprises, we also conducted a series of interviews with investors to kick off the study. This included conversations with funders who are not yet investing in mobility to understand their view of sector and its match with their existing investment theses, and what impact metrics they would need to see to consider this sector. We complemented these with interviews with impact investors who are currently investing in mobility to better understand their investment theses, how they evaluate enterprises in the space, and the impact metrics they consider.



Mobility enterprise interviews – During the design phase BFA Global also interviewed individuals in each portfolio company's hierarchy to better understand the company's development, any relevant customer / driver impact studies and data, and their long-term strategy. We also sought to explore the team's experience communicating the company's business model and impact to impact investors. While in-country, we also interviewed members of the field operational teams at both headquarters (i.e., national sales and marketing leads), as well as field managers

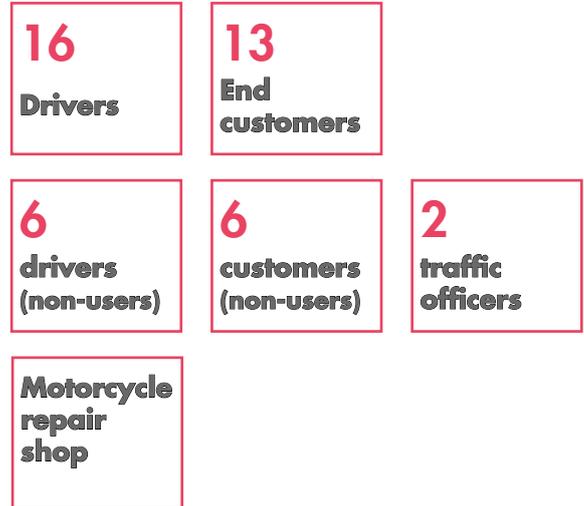
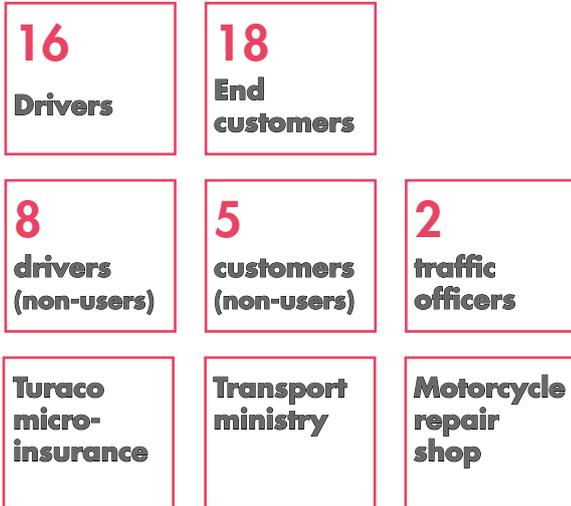


Qualitative research with drivers and end-customers – The bulk of the study focused on in-country qualitative research with participating drivers and customers of each enterprise. Supported by research assistants, BFA Global conducted in-depth semi-structured interviews with 15 motorcycle taxi drivers and 15 passengers end-customers per enterprise in Uganda and Nigeria. All interviews were guided by a semi-structured questionnaire. Each respondent was asked the same questions, using a mix of open-ended and codified-response categories.





Individual Interviews



The sample size of ~15 drivers and customers was meant to allow us to cover significant variation in individual traits while still having enough respondents per cluster to inform broader applicability. It's important to note that this sample was not large enough for statistical significance. Rather, we sought to understand key dynamics shaping drivers' and customers' experiences, and how their livelihoods are impacted by their participation in the companies' platform.

Each participating enterprise provided BFA Global with a list of drivers and customers in the designated geographies, from which BFA Global selected the target respondents based on their length of experience with the service, frequency of use, and gender. Interviews took place in urban Kampala for SafeBoda, and Lagos and Akure for MAX.

These interviews were supplemented with focus group discussions with non-users (both passengers and drivers) in each market, interviews with headquarters and field operational staff from each enterprise, and conversations with other relevant local stakeholders including traffic officers, transport ministry and microinsurance partners (Uganda).

Background

Ride hailing has become a mainstream mobility service offering throughout the world, growing in South and Southeast Asia in the last 10 years, and featuring startups that are bringing a new version of the model to East and West Africa. Ride hailing is a set of technologies and services that deliver on-demand transportation options that connect end-consumers with a supply of independent drivers who use their own vehicles. Ride hailing models often deliver a range of services through an end-consumer and driver-facing smartphone app to request / accept rides, predict prices, track driver location, and process digital payments. The most commonly known global ride-hailing models include [Uber](#), [Lyft](#), [Grab](#), and [Didi](#). The model is transforming the way people commute and move goods, creating substantial employment opportunities, and even increasing financial inclusion through the use of digital payments and e-commerce platforms, as well as asset financing for drivers to acquire vehicles.

Motorcycles have exploded as a transportation option in urban African cities in the past decade, creating a low cost option for millions to increase the speed and extend the reach of everyday transport. First- and second-hand bikes are sold in most urban and peri-urban areas, and spare parts for major Indian, Japanese, and Chinese motorcycles widely available across the continent. While motorcycle companies are paying more attention to Africa's emerging transportation needs and have brought down prices, motorcycles remain out of reach for most African households and small enterprises. This has created a major market opportunity for individuals to operate motorcycle taxi services, often informally, delivering passengers and goods on a per-trip basis. **SafeBoda** and **Metro Africa Express (MAX)** are examples of technology-enabled urban mobility enterprises, leveraging smartphones and data to connect a supply of trained drivers with demand for safe and efficient transportation from end-consumers.

The Sustainable Development Goals (SDGs) were created in 2015 to provide a global agenda for addressing many of the world's most pressing problems, and provides a blueprint for how mobility can impact individuals, communities, and the natural environment. While not a separate SDG, mobility is a key enabler of multiple priorities in the global sustainable development agenda. This section summarizes the primary areas where mobility is currently impacting society and the economy through the lens of the SDGs, and provides an introduction to how the services of SafeBoda and MAX are contributing to the realization of these goals. The following section dives deeper into the direct impacts on drivers and end-customers, and indirect impacts on the economy and society.





SDG 1: Eliminate Poverty

SafeBoda and MAX set out to dramatically improve the affordability, accessibility, and safety of motorcycle taxi transportation in urban areas. Each company invests heavily in training drivers and monitoring their performance to achieve these goals. These on-demand transportation options reduces trip complexity (allowing for door-to-door travel), extends end-customer opportunities (education, health, employment, social, family) into new geographies, and opens up the potential to work longer or later hours via reduced perception of night travel risks – all contributing to the social and economic opportunities of urban communities.



These models are also starting to unlock new economic opportunities that build off of ride-hailing – i.e. food and product delivery can create new small shop and restaurant opportunities that simply never existed before.

Shorter travel times are particularly important for business and livelihood-related activities since people can increase their deliveries and reduce their travel time, with end-customer respondents. indicating that MAX and SafeBoda services lower their daily transport costs by an average of 35%-50%. These models are also starting to unlock new economic opportunities that build off of ride-hailing – i.e. food and product delivery can create new small shop and restaurant opportunities that simply never existed before.

Shorter times

Shorter travel times are particularly important for business and livelihood-related activities since people can increase their deliveries and reduce their travel time

35% - 50%

MAX and SafeBoda services lower businesses daily transport costs by an average of 35% - 50%

Time saved

Respondents are able to complete additional business activities, and thus increase revenue from the time saved, which they were able to pump back into the business as working capital.

25% - 50%

Participating drivers take home ~25% more than similar taxi drivers in the informal market as they repay bike loans, and 50% more once they own their own bikes

Reliability

These services allow people to reach school classes, appointments, and jobs on time, reliably.



SDG 3: Establish good health and well being

Road safety is a major development obstacle in most emerging economies, stressing public health budgets, removing productive members from the workforce.

Accidents can impact household economics in many ways: the direct cost of emergency treatment and hospital costs, time away from productive work, as well as the indirect costs of the stress caused by a family member's injury. Poor people are likely at greater risk for such accidents because they tend to walk and a high proportion of road traffic accidents involve pedestrians. Limited and inefficient transportation options constrain mobility in and around urban areas, making it difficult and expensive for people to connect with employment, education, and training opportunities, as well as essential public services.



Poor people are likely at greater risk for such accidents because they tend to walk and a high proportion of road traffic accidents involve pedestrians.

Road traffic accidents are also a major health issue, with over 1.25 million people killed each year from crashes, and another 20-50 million injured. More than 90 percent of road fatalities happen in low- and middle-income countries – even though these countries are home to less than 50% of the world's working vehicles. By 2030, road accidents are projected to kill more people than HIV/AIDs, tuberculosis, and malaria combined.¹ Road traffic accidents predominantly impact the working age population, and have already become the single largest cause of death among 15-29 year olds.² The high costs of medical care and lost wages from accidents alone can impede a family's progress out of poverty.

1.25 million

people die each year from road traffic crashes

90%

of road fatalities happen in low- and middle-income countries

2030

road accidents are projected to kill more people than HIV/AIDs, tuberculosis, and malaria combined

15 – 29 yr olds

the single largest cause of death among this age segment is road traffic accidents

1 World Health Organization Global Status Report on Road Safety https://www.who.int/violence_injury_prevention/road_safety_status/2018/en/

2 World Health Organization Global Status Report on Road Safety https://www.who.int/violence_injury_prevention/road_safety_status/2018/en/

Safety

These services have eliminated female customer exposure to the type of violence and harassment they would otherwise face with public or informal transportation options

Confidence

women and girls now feel more confident in pursuing economic and education ambitions

75,000

MAX and SafeBoda are enabling up to 75,000 women to more safely, efficiently, and cost effectively reach their jobs, access essential services for themselves and their families, and contribute to their independence and ability to pursue new productive opportunities.



SDG5: Gender Equality

Inefficient, limited, and unsafe mobility can significantly impact gender equality by limiting women's empowerment and economic opportunities, and exposing them to security risks. The International Labour

Organization research has found that "limited access to safe transport is the greatest obstacle to women's participation in the labor market in developing countries."³ Urban travel for women in emerging markets often requires long and unsafe walks, high cost trips in unsafe vehicles, and long waits between poorly connected transportation services. Particularly in urban areas, women and girls are often the targets of sexual assault and abuse in transportation, leading many to limit their daily transportation or avoid trips altogether. Women also generally have less money to spend on transportation, and are less able to change their schedules to accommodate more efficient transport modes or trips so face higher costs to poor mobility options. Furthermore, since women have greater responsibility for household maintenance, family health care, and children's education, any transportation delays and inefficiencies also reduce the time they have for economic opportunities.

This research found that MAX and SafeBoda are making major progress in reducing constraints to women's and girls movement – time, space, financial restraints – and gives them freedom of action to travel at their own convenience. Female end-customers felt that these services have eliminated their exposure to the type of violence and harassment they would otherwise face with public or informal transportation options. Trained drivers tend to follow the speed limit, listen and oblige when asked to slow down, and are generally more trusted by women clients. By significantly reducing these safety concerns, women and girls now feel more confident in pursuing economic and education ambitions. Both enterprises also deliver more direct and faster transportation options, which in most cases leads to a reduction in transport costs which women overwhelmingly use to the benefit of the family – i.e. more and better food. By facilitating over 150,000 trips per day across three markets, MAX and SafeBoda are enabling up to 75,000 women to more safely, efficiently, and cost effectively reach their jobs, access essential services for themselves and their families, and contribute to their independence and ability to pursue new productive opportunities.

³ https://www.ilo.org/global/about-the-ilo/newsroom/news/WCMS_566891/lang-en/index.htm

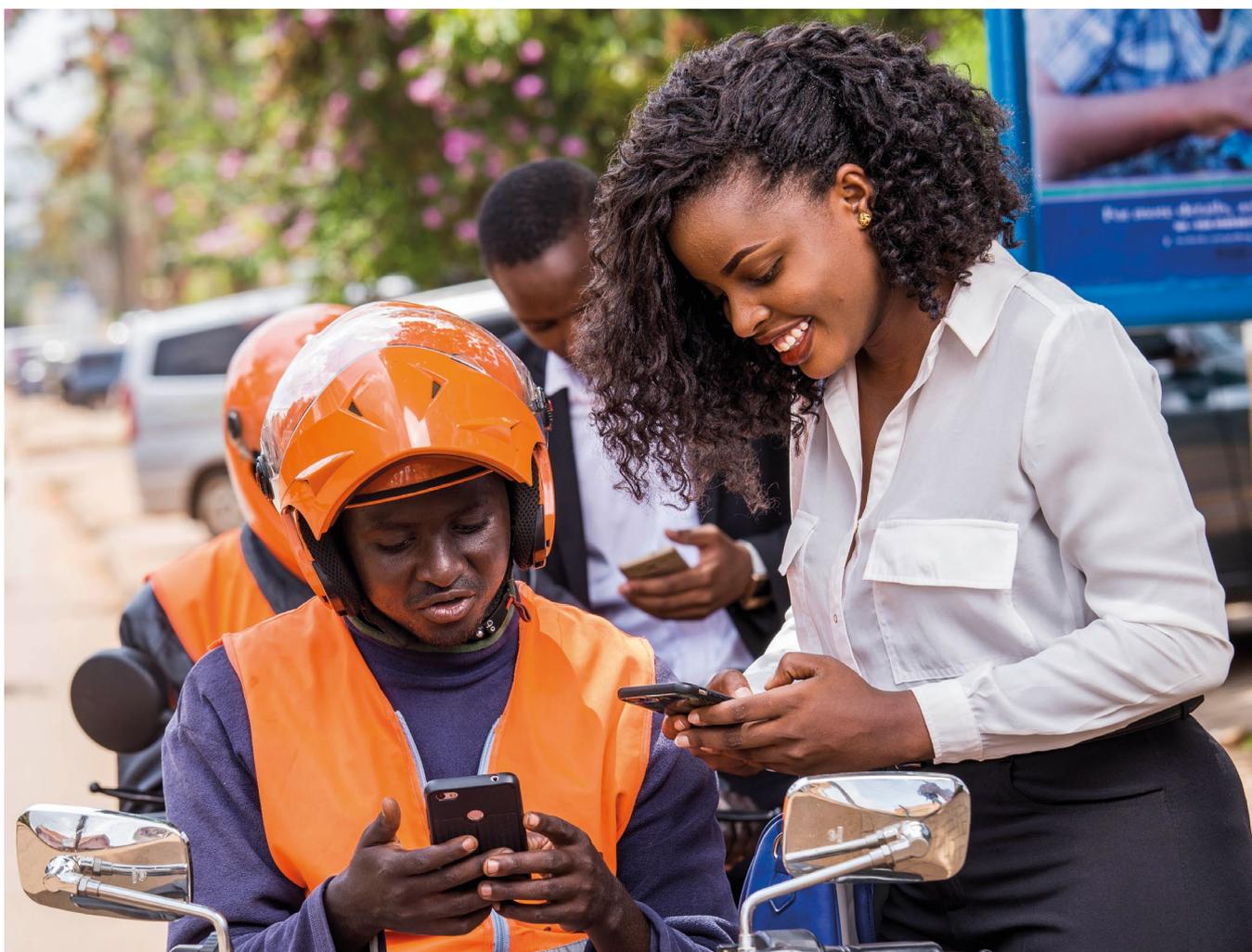
8 DECENT WORK AND ECONOMIC GROWTH



SDG8: Decent Work and Economic Growth

Sustainable economic development will require not only significant job creation, but also a focus on ensuring employment opportunities are of high quality, offer fair incomes, and are available equally to women, men, and youth. Traditionally, being a motorcycle taxi driver has meant long hours weaving in and out of congested urban environments, daily exposure to the risk of an accident, frequent run-ins with police and other authorities, and multiple safety issues related to transacting in cash. The broader community typically looks down on motorcycle taxi drivers, viewing them as uneducated and dangerous, and there are no systems in place to protect them from exploitation and harassment on a day-to-day basis. Most drivers in the informal economy lack driving licenses, and have extremely limited access to training and educational opportunities that could improve their productivity and road safety.

Drivers participating in MAX and SafeBoda's networks face a reality that is different in almost every way. First, the ride-hailing model formalizes gig economy activity for drivers, creating formal records and data on performance, income, and savings. These drivers receive training in road safety upon joining, and can often access additional upskilling opportunities throughout their journey with the enterprise to diversify their roles (i.e. adding product delivery or digital payment agent activities) and further their personal development. Real-time matching of supply and demand through the digital platform leads to improved income predictability and higher take-home incomes for most drivers, as well as contributing to their sense of job security. By providing access to insurance and financial services these enterprises also support the social protection of drivers and their families, and create employment and often credit histories they would otherwise struggle to achieve in the informal economy. As both MAX and SafeBoda drivers tend to be under 30 years of age, both companies are creating a channel for reducing the proportion of youth not in employment.



Customer Impact

Safe and efficient urban transportation is a critical component of economic and social development, enabling people to access education and jobs, markets, essential services, and family. Unfortunately, significant barriers are slowing the transition to sustainable mobility, and serve to widen the mobility opportunity gap between the rich and poor. People face limited work opportunities given the limited reach of public transportation and high costs of private vehicle ownership. **Security risks and concerns over driver safety also cause women and girls to limit the times they travel, and leading them to forego opportunities altogether.** Poorly managed intersections and congested streets make regular business related trips time consuming and expensive, causing businesses to miss deadlines.

This section presents a summary of qualitative research with current and former MAX and SafeBoda customers, and is also informed by additional conversations with local transport stakeholders (i.e. motorcycle mechanics and traffic police officers). Respondents were selected by BFA Global in conjunction with each enterprise based on a few key criteria: gender, service usage level, and whether they were active or dormant.

Safer transportation

End-customers interviewed in both markets were **motivated to sign up for the MAX or SafeBoda service for road safety, cost, and convenience**, in that order. Given the high incidence of road traffic injuries and deaths in both Lagos and Kampala, and the high proportion of accidents involving motorcycles, it's not surprising that safety is a top concern. Respondents were particularly drawn to these services based on an understanding that approved drivers were trained and insured, wore helmets and had them available for customer use, and were incentivized to drive more safely. Over half of the respondents in each market noted that the platform drivers would slow down and drive more carefully when asked, and most indicated that drivers in their experience almost always follow the traffic rules. While customer accident data before and after signing up for these services was not available for this study, the perceived improvement in safety emerged as an overwhelming benefit across both end-customer groups.



'The MAX Champions listen when we ask them to slow down'

The core ride-hailing software gives end-customers visibility into driver ratings and performance, and allows them to track driver location during both the pickup and the trip processes. Customers also expressed confidence and a heightened sense of security through the additional data – driver name and ID, prior performance, location, etc. – available through the platform and smartphone app, as well as the ability to avoid using cash altogether if preferred.

More efficient transport

SafeBoda and MAX services deliver time savings through more direct and faster transportation, and in many cases, a reduction in transport costs. This starts with reduced time and complexity in finding a ride, ensuring the driver knows your destination, and avoiding having to negotiate a price – all of these steps are done by the smartphone app. As motorcycle taxis can more easily navigate congested areas and travel on smaller and often dirt roads, most passengers described MAX and SafeBoda as much faster as compared to alternatives. Respondents also pointed to an increased ability to predict travel times as helping them in overall schedule and time management – reaching school classes, appointments, and jobs on time, reliably.

Shorter travel times are particularly important for business and livelihood-related activities since people can increase their deliveries and reduce their travel time (i.e., a photographer delivering orders in Kampala, a catering and food delivery business in Lagos) and lower their daily transport costs by an average of 35%-50%. As these companies diversify into product / food deliveries and other related services this will likely create new entrepreneurial opportunities for restaurants and small shops that otherwise wouldn't have delivery options. Respondents described being able to complete additional business activities, and thus increase revenue from the time saved, which they were able to pump back into the business as working capital.

These mobility enterprises are also beginning to extend access to new opportunities for end-customers. While examples were limited, some respondents indicated that safer, on-demand transport from MAX and SafeBoda is making it easier to think about and explore new education and income generating opportunities in parts of the



Not a single respondent in either market has experience with **abuse of any kind** under the MAX and SafeBoda service

city that would otherwise be too expensive or unsafe to reach. Both MAX and SafeBoda extend people's reach beyond urban centers, so customers living in city outskirts and nearby rural areas can connect with urban markets since motorcycles can go beyond concrete roads and along village paths that trucks and cars cannot navigate.

Safety and comfort for women

In addition to improved safety while on the road, MAX and SafeBoda services have **reduced overall transportation security risks for women and girls**. Women and girls are frequently exposed to violence and harassment in transportation, whether it's walking, taking public transport, or riding in a private car or motorcycle taxi. Half of the female MAX respondents in Lagos reported being not just verbally insulted, but frequently physically abused while using okadas in the informal market. Not a single respondent in either market has experience with abuse of any kind under the MAX and SafeBoda service, have not heard of others experiencing these issues, and most describe the trained drivers as courteous and approachable. As women typically travel on a much lower budget compared to men, the lower cost of ride hailing services may also boost women's ability to take additional and longer trips. Most female respondents noted that they are now taking more trips and over longer distances as compared to their previous options.



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These benefits all contribute to **female respondents' opinion that SafeBoda and MAX have reduced their constraints -- time, space, financial -- and gives them freedom to travel at their own convenience.** Women can travel when they want and to places that were previously inaccessible, feel comfortable taking later work shifts in the day, and, especially for younger women, think about new education ambitions.

Female passengers also expressed an appreciation for smaller, but important changes both companies have made. Women traveling to formal jobs in the mornings mentioned that MAX Champions always have good hygiene, which helps them maintain a professional appearance. In Nigeria, it's common for informal motorcycle taxis to make adjustments to their bike seat, extending the length and increasing the angle in order to create space to carry more than one passenger at a time. These changes also lead to an uncomfortable travel experience for women as the bike seat angle forces them to sit against the driver's back. Several MAX customers expressed appreciation that the company's bike seats are not adjusted, and allow for a comfortable amount of space between the passenger and driver.



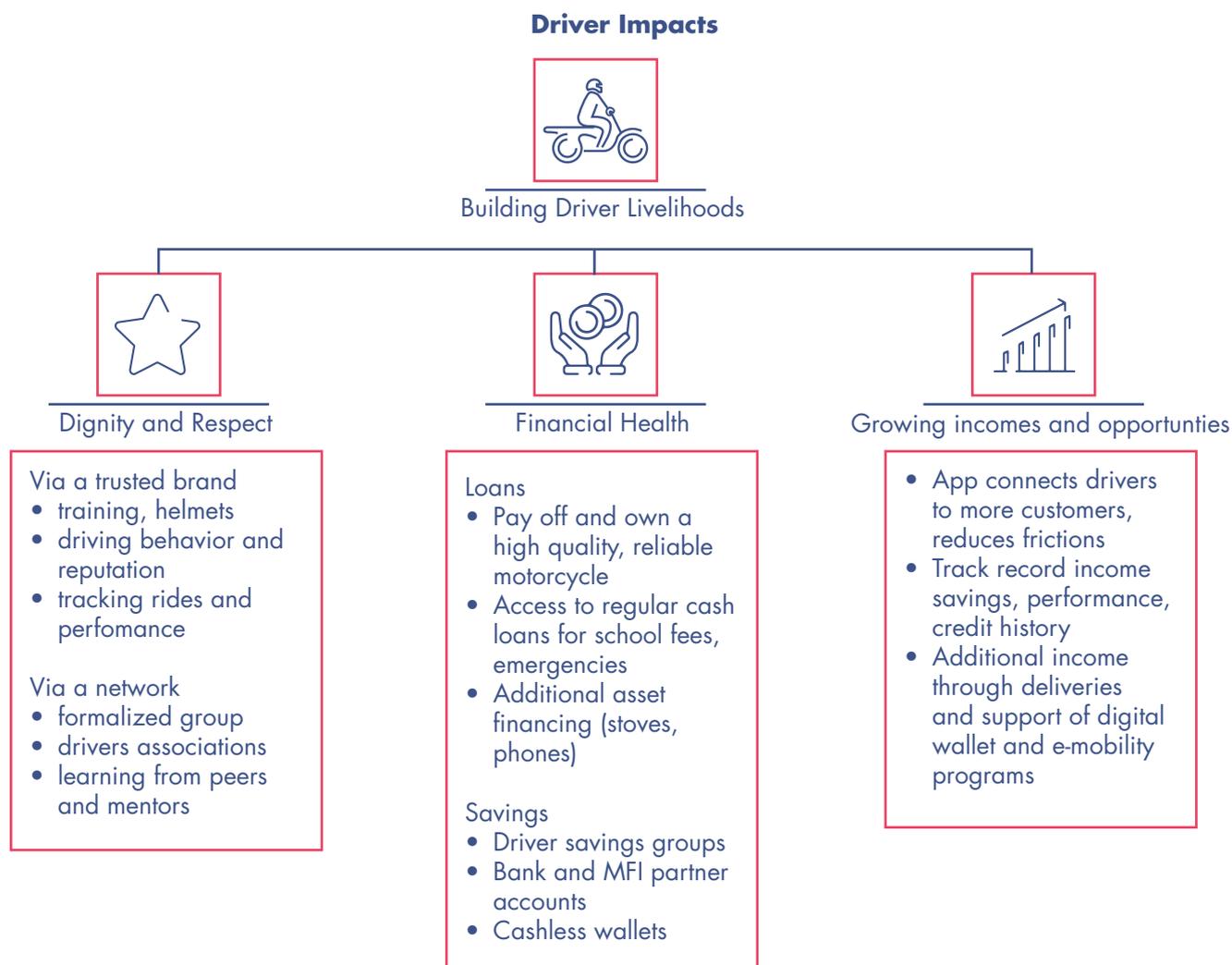
'Normal okadas don't value women at all. MAX takes care of me.'



Women can travel when they want and to places that were previously inaccessible

Driver Impact

This section presents findings from qualitative research conducted with MAX drivers (also known as “Champions”) and SafeBoda drivers in Q4 2019, and includes additional insights from interviews with motorcycle taxi users in both markets who do not participate in ride-hailing platforms, as well as churned drivers, and local transportation stakeholders i.e., accidental insurance provider and traffic police officers.



Dignified and inclusive employment

For millions of young men across East and West Africa, operating independent motorcycle taxi services is a largely cash-based income generating activity fraught with physical safety and financial risks. Operating exclusively in the informal economy, these individuals have little to no income security and predictability, don't qualify for or can't access insurance services, and are a broken part, illness, or injury away from having no way to financially support themselves. Moreover, the informal motorcycle market in both Kampala and Lagos has a reputation for being unprofessional, dangerous, and often chaotic.



MAX Champion, Lagos



'I've been an okada for years. With MAX it's much lower stress because I don't have to look around for customers, the police don't bother me, and I like being a branded rider.'

The combination of technologies and services offered by both MAX and SafeBoda have served to formalize the driver role, **transforming the public's view of the occupation and creating social networks to support drivers**. MAX and SafeBoda drivers stand out from the crowd of informal drivers, and operate with a renewed confidence in their own capabilities to navigate the roads safely.

Both companies have invested heavily in developing a highly visible brand, intensive driver training for safety, and ongoing monitoring of performance to build trust in the local market, and make drivers feel confident being part of a formal entity. This brand association gives drivers a **sense of dignity** where society would otherwise look down on them as being uneducated, cheats, and thieves.

Drivers in both markets also enjoy working with a network of fellow drivers from whom they can learn (often via WhatsApp groups), with many drivers in both markets indicating that "making lifelong friends" is a primary benefit from participating in the service. As most younger drivers have recently relocated from peri-urban and rural areas to urban centers to work as motorcycle taxi drivers, this internal network – often described as a "family" – can make this transition easier, creating opportunities for mentorship and guidance from fellow drivers, and in some cases leading to the establishment of a formal motorcycle taxi cooperative.

More and better work

Respondents in both markets spoke highly of their **increased ability to control the direction of their lives**, with lower daily stress through flexible working hours, a wider geographic reach for client acquisition, and less time spent tracking down new clients.

Prior to joining the MAX and SafeBoda platforms, drivers were highly dependent on customers who could be acquired in-person at a particular location (stage) where they are based. Under the informal model drivers would typically spend over half of the day waiting at their stage for potential customers, a time cost and location dependency that is largely eliminated with the MAX and SafeBoda platforms, which connect them with trips around the city. In Lagos, MAX Champions have also been able to expand the geographies they serve as the company-financed motorcycles meet the engine specs required to travel on national highways, which are often out of reach for informal okadas.

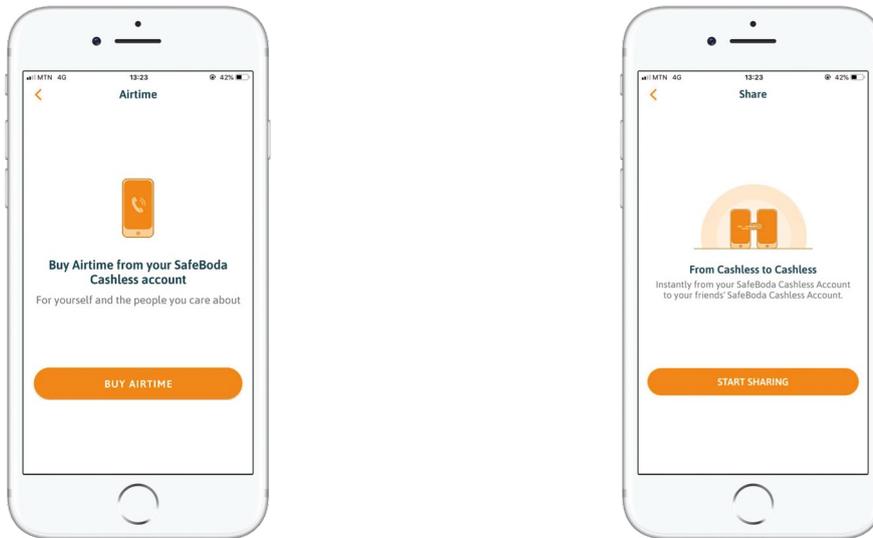
MAX and SafeBoda drivers have overwhelmingly experienced higher and more predictable income as part of the platform, which in most cases has led to significant change in their family's social and economic future. **Research in both markets found that participating drivers take home ~25% more than similar taxi drivers in the informal market as they repay bike loans, and 50% more once they own their own bikes.** This increase in take-home income and asset ownership can be transformational, enabling drivers and their families to eat more and better quality food, and providing capital to build a home for the drivers and their family members back in a rural village and reliably pay school fees for children. Most drivers use the new income to either improve their home or invest in income diversification, establishing small retail shops or mobile money agent businesses for a family member to run. MAX drivers in Nigeria take significant pride in their ability to both support the ongoing expenses of family members through regular remittances, as well as contribute to home construction and improvements in their home village. Both also contribute to improved feelings of dignity and respect in their role as Champion.



'Being a MAX Champion has given me peace of mind.'



Financial health and access



Screenshots of SafeBoda's "Cashless" account screens, Dec 2019

Both MAX and SafeBoda's software platforms **create formal records and data on driver performance, earnings, and a transactions history** as since they participate in in-house savings and credit schemes. Both companies are leveraging this data to offer financial products internally, such as short-term loans and savings. The package of benefits and financial services serves as **a gateway to greater financial inclusion and financial health**. To start, these companies often facilitate the opening of bank and mobile money accounts for drivers, and support their registration for national identification and driving license documents.



'The SafeBoda cashless option is helping me to build a savings mentality.'

SafeBoda recently launched an internal "cashless" wallet that enables both drivers and customers to electronically store value, pay for rides, purchase mobile airtime, send funds to other customers or drivers, and acquire goods and services from partners – all within the SafeBoda smartphone application. All SafeBoda drivers participating in this study were recently onboarded to the cashless option, with most seeing it as a savings tool where they can accumulate funds electronically and "keep it away from" the temptation to spend.

Furthermore, all MAX and SafeBoda drivers are provided with accidental and/or emergency medical insurance, both of which are typically out of reach for drivers in the informal economy and give the driver and their family additional financial security. Participating SafeBoda riders and MAX champions can request short-term credit directly from the mobility enterprise, which is delivered to their digital wallet and can be used to meet unexpected payment obligations, such as major bike repairs, burials, family health costs, or a child or sibling's school fees.



In the next 4 years these two companies aim to have 400,000 financially included drivers who are tech literate, earning stable wages, acquiring productive assets and equipped with tools to improve their financial health and invest in their families.

Both companies also offer approved drivers the opportunity to acquire a motorcycle on credit terms, repaying over the course of 12-18 months at a highly competitive rate. This can be transformational as most drivers are either unbanked, have an account with a bank that is dormant or in arrears, or are unwilling to take a loan from a formal financial institution.

While most drivers continue to allow customers to pay in cash, both MAX and SafeBoda have given them a reason to establish bank and mobile money accounts and a tangible ongoing reason to promote digital payments. Drivers feel more comfortable picking up customers who request a ride using the smartphone app since the linked bank account or digital wallet guarantees they will not skip out on the bill. Furthermore digital payments reduce the driver's exposure to risk of theft as they no longer need to carry large amounts of cash, and eliminates the need for exact change at a trip's end.



Additional financial opportunities

Both companies are exploring how to make their internal data more useful to formal financial institutions that might want to offer products to participating drivers. For example, both companies encourage drivers to build a savings mentality, and have experience connecting drivers with formal financial institutions to establish savings accounts.

In addition, SafeBoda and MAX drivers noted that their digital capabilities have improved significantly through the initial training and ongoing use of smartphones, apps, digital wallets and mobile money, which are often financed directly by the mobility company. Many drivers were previously using basic handsets or feature phones, so using a smartphone for their ride hailing role has created confidence in their digital skills that can carry over into other roles and prepares them for additional digitally-oriented gig economy opportunities.

The SafeBoda and MAX platforms facilitate secure payments between various types of users, including customers, drivers, mobile money operators, insurance providers, and financial institutions, thereby providing an on-ramp for drivers to participate in the digital economy in other ways.



'People respect us now. Trucks and cars even stop to let us pass if they see the orange helmet' – SafeBoda Driver

Gender mainstreaming in the mobility sector



The impact the mobility sector has created for women with their products and services is significant, yet remains largely unmeasured and unrecognized in the sector. Meet Seniorita, a 31 year-old single mother of four children who is the only female driver on the Safe Boda platform.

“The reaction from most of my male customers is at first they fear that I might get them into an accident, worrying that a woman can’t drive a boda. But once I drive them for a few minutes, they get comfortable,” says Seniorita

Seniorita learned how to ride a motorbike after she completed her primary education when she enrolled in a mechanical engineering course in her home town of Fort Portal, Uganda. After completing her engineering education she decided to move to Kampala in search of new opportunities.

In Kampala, she started a job in mobile airtime sales and distribution, delivering to clients throughout Kampala via motorcycle and being paid in commission. Six years into this role, the Government of Uganda banned the use of airtime scratchcards, rendering her jobless.

Her years navigating a motorcycle through the congested streets of Kampala gave her first hand exposure to the boda boda industry, where she was first exposed to SafeBoda’s brand. She immediately noticed their helmets, reflectors, and bright uniforms – “they were very smart and looked organized.”

In late 2018, she decided to give SafeBoda a shot. It took almost four months for Seniorita to register for a national ID, and another 2 days to complete the SafeBoda registration and training. In her nine months with SafeBoda, Seniorita has experienced a number of positive benefits, including:



Gainful, predictable employment and prompt commission payments, which allow her to make timely household payments and plan for the future



Financing for other lifestyle improving assets including an efficient cookstove, which was also purchased via SafeBoda



Flexibility in her work schedule that allows her to transport her children to school in the morning



A strong sense of community and respect within the SafeBoda community that she would not have received in the informal boda boda market



Take home pay that is 2.5 times higher than what she was earning in mobile airtime sales and distribution



Financial discipline built through use of the SafeBoda’s cashless wallet



Access to a high quality motorcycle that she is paying off in increments through SafeBoda financing

Seniorita is already using the financial gains to invest in her family’s future, paying for one of her children to attend boarding school, investing in her farm, and building a savings account.

“Women drivers are careful and observe traffic rules, they avoid danger with consequences for their participation in work, Safe Boda should engage and mobilize more women to join their platform,” - Seniorita

Scaling Impact in Mobility

Mobility is a pressing area of focus for the international development community, and an emerging funding area for public, private and impact investors. This closing section provides a set of recommendations for mobility enterprises and funders to expand impact, and suggests ways to reframe and improve messaging about the full range of impacts created by these companies to convince the broader impact oriented investing community. Several areas of opportunity were identified during the field research and analysis phases that could enable MAX, SafeBoda, and the wider mobility sector to improve their impact on individuals, the economy, and the environment.

- Daily cash flow is an ongoing challenge for drivers, particularly during the the motorcycle loan where up to half of a day's earnings may go toward repayment. Mobility enterprises could explore the potential to extend the repayment period for up to two years, either via partnerships with local lenders or international investors, and offer some level of repayment flexibility that is tied to performance metrics.
- As the MAX and SafeBoda driver networks expand and competition from other ride-hailing companies increases, many drivers are feeling their take home pay is slowly decreasing. Several respondents indicated that they are no longer able to meet some financial commitments that they established when take home pay was higher on average. While a risk to driver sustainability and churn, this could be an opportunity for mobility enterprises to train drivers on financial management / discipline, and expand their savings programs.
- While much less frequent than in the informal motorcycle taxi industry, accidents still seem to be a normal part of the job. Most respondents had at least one serious accident and only a few drivers interviewed (all with only three or fewer months on either the MAX or SafeBoda platforms) had never had an accident. Several drivers declined to report their accident to the mobility enterprise, either out of fear of financial punishment or a misunderstanding of the accidental insurance options. As these companies scale and build experience, it will be important to create the right internal operational and data processes and incentives for drivers to report all accidents and injuries.



- As ride hailing in East and West Africa scales, some operators are onboarding new drivers at breakneck speed in order to deliver driver ubiquity for end-consumers. Respondents in Uganda described this as increasing competition for drivers, and potential lower overall quality if new drivers are not put through the same rigorous training and vetting processes. MAX and SafeBoda could learn from these experiences and focus on maintaining both record network growth and superior service.
- Our research found that drivers were confused by the terms and conditions of accidental and health insurance offerings in both markets, while others were not even aware of the coverage and automated deductions from their pay. Low awareness and misunderstanding of the coverage details were the reason why many respondents did not report accidents to the company, and ended up paying hospital bills out of pocket. Both mobility enterprises should improve the insurance coverage portion of their training and onboarding processes, and consider pushing regular updates to their existing network – i.e., through app notifications or outbound calls from the call center.
- Most of the younger drivers interviewed recently relocated from rural areas to the urban center, and are using the motorcycle taxi occupation as an interim step toward other economic ambitions – notably, owning a car they can operate as a taxi. This could present mobility enterprises with an opportunity to partner with organizations that could deliver long-term growth pathways for drivers to graduate into better opportunities.
- While Senorita’s success as the first female SafeBoda driver is inspiring, the number of women car and motorcycle taxi drivers in Africa is extremely low. Mobility enterprises and sector support organizations can create and fund programs to pilot test and scale programs to bring more women into the sector.
- There is a danger that ride-hailing discourages people from walking, cycling, ride-sharing, or using public transit altogether, thus thwarting sustainable transport goals. This also could lead to higher greenhouse gas emissions and local air pollution. Mobility enterprises and funders should continue to invest in electronic mobility technologies, and scale programs (i.e. MAX E-Mobility) as and when these models are cost competitive.



The number of women car and motorcycle taxi drivers in Africa is extremely low

Younger drivers relocated from rural areas to the urban center, are using the motorcycle taxi occupation as an interim step toward other economic ambitions

Assessing the impact of tech-enabled urban mobility

The mobility sector is poised to grow rapidly, but faces several key barriers to growth and inclusivity. Other recommendations emerging from this research that can improve the broader impact messaging of sustainable urban mobility through safe motorcycle taxis:

- Increased attention to **pro-poor** product and pricing models, even if on a pilot basis, and explore partnerships and funding windows that can extend the reach into **rural** markets
- Pitch safer transport, and reduction in road traffic injuries and deaths, as a **key pillar of public health agendas**
- Emphasize transportation as an **enabler** of other high impact areas, such as health (transport to hospitals for injured/sick, timely transport for health workers), education, energy access, and poverty reduction
- Highlight the impact on **women and disadvantaged** populations — reduces travel time and costs, improves confidence in motorcycle transport, enables night travel
- Better communication of current experimentation, medium-term **shift** to electric vehicles
- Pay attention to the sector's impact on **financial inclusion and financial health**, by providing drivers with a strong portfolio of financial tools to weather unexpected changes, and as a driver of electronic payment usage
- Fund peer learning and industry knowledge efforts, including longer-term impact studies, and linkages with other sectors. Provide incentives for enterprises to use similar metrics and share data publicly.
- Carefully consider the role(s) that funders can play in promoting impact as a priority in the mobility sector, particularly within board and strategy decision-making for enterprise. Help firms balance financial and impact goals with funders that can support decision-making at key junctures in the company's evolution.



Appendix 1: SafeBoda Company Profile

SafeBoda is a mobility enterprise headquartered in Kampala, Uganda, that focuses on improving the safety, convenience, and professionalism of motorcycle transportation in Africa. Founded in 2014 with an initial focus on the motorcycle taxi (also known as “boda boda”) industry in Kampala, SafeBoda is now active in three countries in East and West Africa.

SafeBoda designed and manages a software platform and suite of services that connects trained motorcycle taxi drivers with end-customers in need of transportation (often referred to as ride hailing), and also manages customer payments and driver commissions. The company trains drivers in road safety, first aid, bike maintenance and customer care.



Road Safety in Uganda

Uganda is a country of over 42 million people, with a population growth rate of over 3% per year, and significant urbanization centered in the capital city of Kampala.⁴ Without an organized mass transit system, movement in Kampala is significantly constrained by congestion that is no longer limited to morning and evening commute times.⁵ Furthermore, the urban population projected to grow from 1.8 million to 10 million by 2040.

Over the last two decades motorcycle taxis, known locally as “boda bodas”, have become a primary form of transportation across the region. While estimates vary, there are at least 300,000 boda bodas in operation in Kampala and likely another million across the country.⁶ Boda bodas are typically unregistered, and driven by unlicensed, untrained drivers operating without third-party insurance coverage. Kampala’s boda bodas are known for not wearing helmets⁷ (nor having them available for customers), and have a reputation for driving recklessly.

A 2018, Makerere University study found that over 30% of boda boda drivers in Kampala used alcohol and/or psychoactive drugs during work, and over half described regularly engaging in risky driving behavior for quick financial gains.⁸

Road traffic accidents are a serious public health issue in Uganda, which already records the highest number of accidents and related deaths in the East African region.⁹ Over 300 boda boda accidents are recorded in Kampala every month, and one person dies each day in a boda boda accident on average.¹⁰ A 2011 study reviewing clinical service records at Kampala’s Mulago hospital found that over 40% of patients admitted to the trauma ward were victims of boda boda accidents.¹¹

SafeBoda offers a package of solutions to address these challenges in Uganda, and has since expanded to Kenya and Nigeria. SafeBoda drivers are licensed, undergo thorough upfront and ongoing road safety training, and are equipped with helmets for the driver and passenger at all times. With a software platform and smartphone apps, SafeBoda can connect customers (demand) with drivers (supply) in real time, saving both time and money that would normally be experienced in commute and waiting times between transport connections.

boda boda

local name for motorcycle taxis

1.8m – 10m

projected growth of urban population by 2040

300,000

estimated bodas in operation in Kampala

4 [Overall total population” – World Population Prospects: The 2019 Revision” \(xlsx\)](#). population.un.org (custom data acquired via website)

5 <https://www.csmonitor.com/World/Africa/2019/0822/Hail-this-taxi-but-hold-on-tight-boda-bodas-swarm-Kampala-streets>

6 <https://www.csmonitor.com/World/Africa/2019/0822/Hail-this-taxi-but-hold-on-tight-boda-bodas-swarm-Kampala-streets>

7 Less than 30% of boda boda drivers in Kampala wear helmets – <https://www.technologyreview.com/s/604013/ugandas-uber-for-motorcycles-focuses-on-safety/>

8 Simwogerere, Michael; Factors influencing high accident rates among commercial motorcyclists in Kampala City, Uganda (2018). Makerere University Kampala, School of Statistics and Planning. <http://makir.mak.ac.ug/handle/10570/7175>

9 [Uganda Road Safety Performance Review](#) – UNECE, Feb 2018

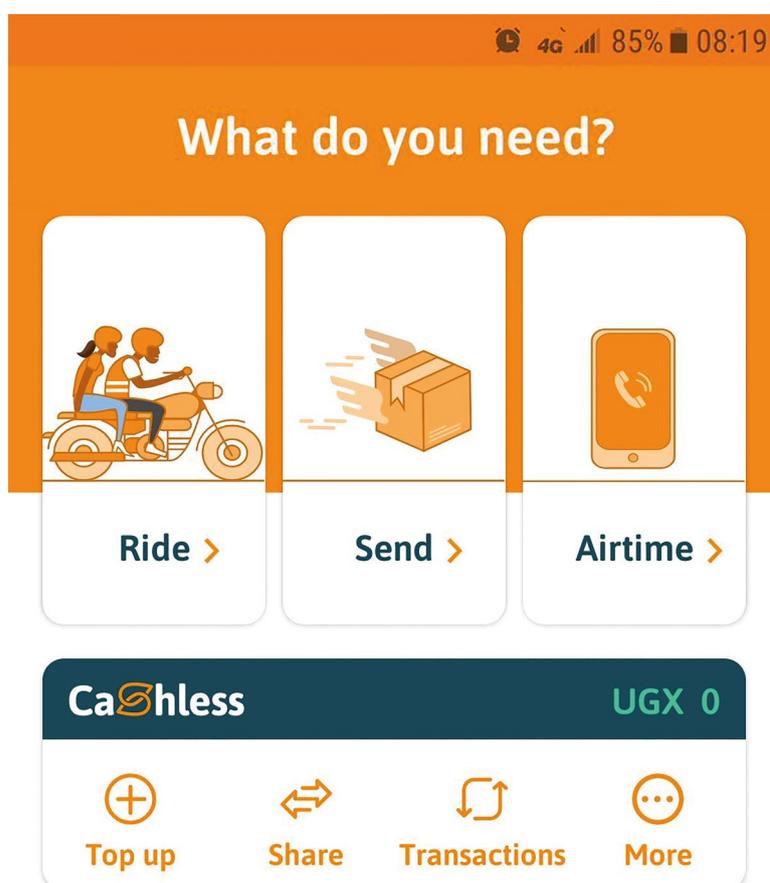
10 <https://globalpressjournal.com/africa/uganda/boda-boda-drivers-uganda-say-theyd-rather-flee-accidents-get-insurance/>

11 Kigera,J; Nguku, L; Naddumba, EK - The Impact of Bodaboda Motor Crashes on the Budget for Clinical Services at Mulago Hospital, Kampala (2011), East and Central African Journal of Surgery. <http://www.bioline.org.br/request?js10009>

To date, SafeBoda has trained and activated 16,000 drivers in Kampala and is onboarding over 300 new drivers every week as the company expands operations. In addition to the core proprietary software and customer / driver-facing smartphone applications, SafeBoda offers a package of financial services to drivers to improve productivity, reduce churn, and improve the social and economic impacts.

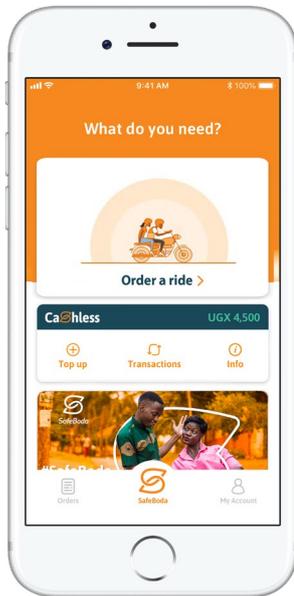
Financial services for drivers

Offering	Description
Asset finance	Financing for drivers to purchase motorcycles, smartphones, or safety equipment
Loans	Regular ongoing and emergency cash loans, deductions are made directly from driver earnings
Savings	Digital SafeBoda wallet and pilot partnership with a microfinance bank for interest-bearing savings accounts
Insurance	Accidental insurance via a partnership with Turaco Piloting family medical and life insurance
Digital payments	Cashless purchases of fuel, airtime, and spare parts P2P transfers between drivers Cashless payments for customers for rides, deliveries, and airtime

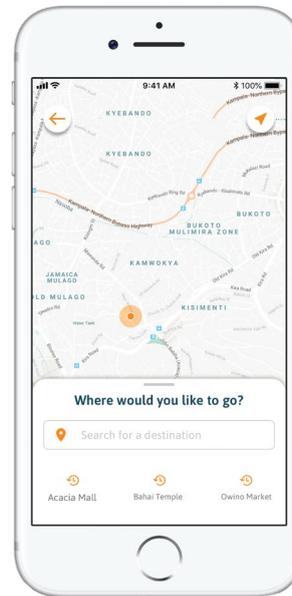


How it works

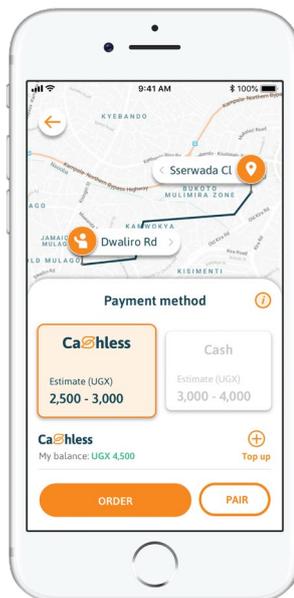
1. Quick and easy access for all your needs



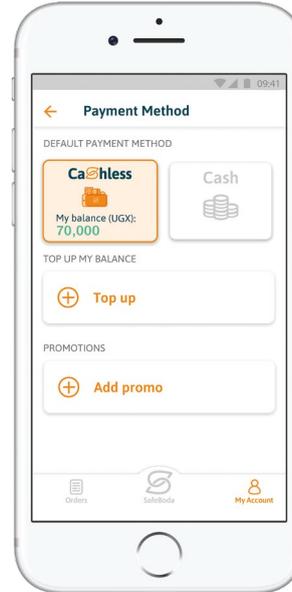
2. Type in your destination



3. See fair price estimate upfront



4. Top up your cashless account and enjoy discounts



SafeBoda consumer-facing app screenshots, Google Play store (Dec 2019)

At present, SafeBoda boasts over 100,000 active customers in Kampala, and completes over 1 million trips per month. The company recently launched a SafeBoda digital wallet to promote more cashless transactions across the value chain. End customers can fund their digital wallets by depositing cash with a participating merchant or SafeBoda driver, or transferring money from their mobile money account. The value in the digital wallet can be used to pay for trips, purchase airtime, and make peer-to-peer transfer. With the digital wallet, SafeBoda drivers can directly purchase fuel, airtime, and spare parts from partnering businesses, transfer funds to and from a connected mobile money account, and instantly send funds to peers within the SafeBoda network.

Appendix 2: Metro Africa Express (MAX) Company Profile

Co-founded in 2015, Metro Africa Express (MAX) is an urban mobility enterprise that uses technology to make motorcycle transportation options in Africa safer, more affordable, and inclusive. The company designed and manages a ride-hailing software platform that connects end-consumers with trained motorcycle taxi drivers, known as MAX Champions, for passenger trips and deliveries. MAX is headquartered in Lagos, Nigeria, boasts a network of over 1,000 participating drivers.

Prospective MAX drivers are put through a screening process and undergo safe driving and first aid training. MAX Champions are all required to use the same motorcycle model, and MAX offers drivers a loan to purchase the motorcycle, which can be repaid in daily increments over a 12-18 month period. Drivers can access financing for smartphones and are provided accidental insurance, two helmets, branded clothing, and first aid equipment.

okada

local name for motorcycle taxis

over 1,000 drivers

in the growing MAX network

over 4 hours

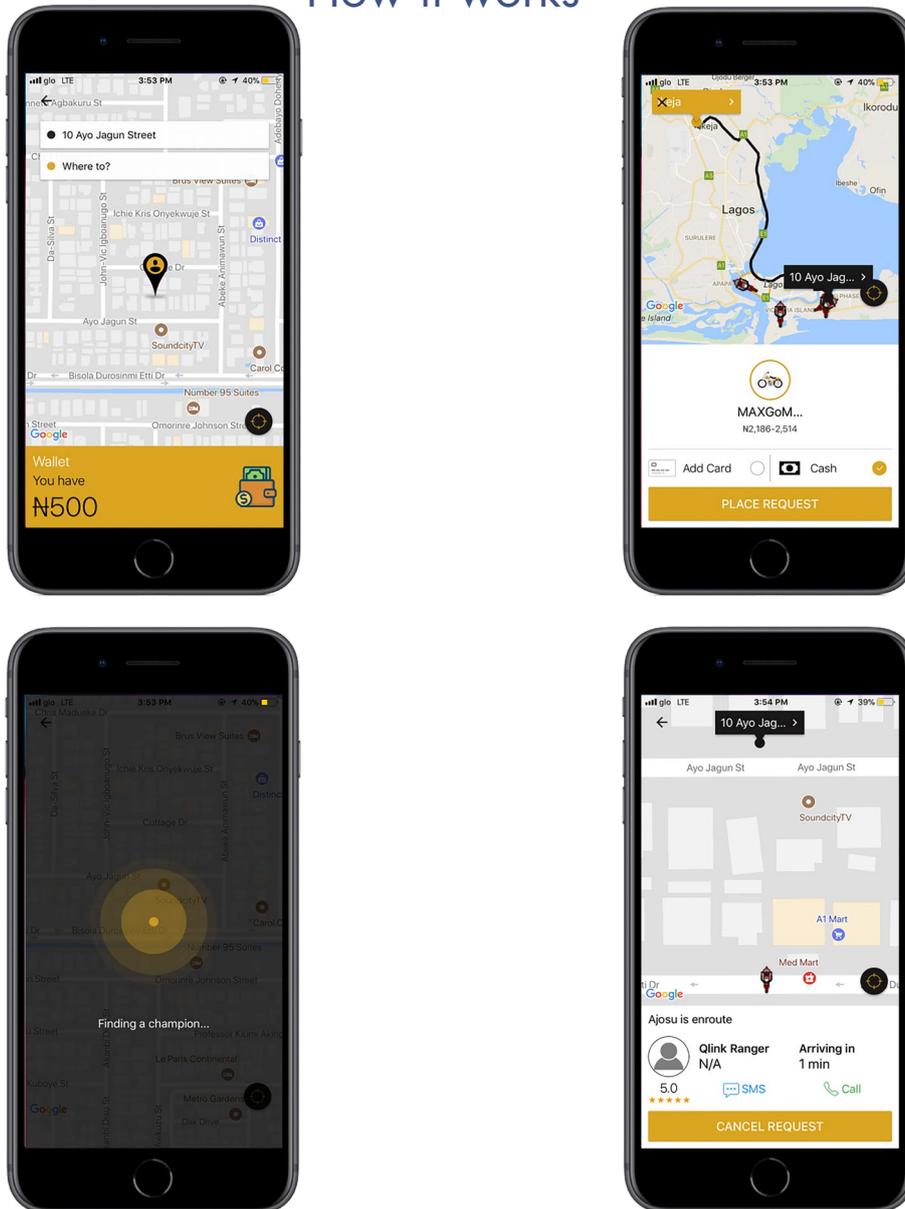
average time Lagos residents spend in the daily commutes



Urban Mobility in Nigeria

Rapid economic growth and urbanization is leading to intolerable congestion in Lagos where residents already spend over four hours per day commuting.¹² This congestion threatens the country's economic progress, and is compounded by high rates of accidents, which are approaching a national health epidemic. Nigeria has one of the highest rates of road traffic accidents and fatalities in the world – already the country's third-leading cause of overall death and the most common cause of disability.¹³ These accidents also take a major toll on the economy. A 2010 study estimated that Nigeria loses over 80 billion Naira from road traffic accidents.¹⁴

How it works



Screenshots of the consumer-facing smartphone app, Source: MAX website, Dec 2019

12 <https://weetracker.com/2019/09/16/african-megacity-productivity-crisis/>

13 The Public Health Threat of Road Traffic Accidents in Nigeria: A Call to Action — <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5405630/>

14 Juillard C, Labinjo M, Kobusingye O, Hyder AA. Socioeconomic impact of road traffic injuries in West Africa: Exploratory data from Nigeria. 2010. <https://injuryprevention.bmj.com/content/16/6/389.short>



Electric Mobility in Africa

Burning fossil fuels for transport accounts for 23 percent of total carbon dioxide emissions and is a significant contributor to air pollution in urban settings.¹⁵ Land-based passenger travel accounts for approximately 12.5 percent of the global CO₂ emissions from fuel combustion and is the main reason for poor air quality in cities.¹⁶ Urban air pollution is causes about 9 percent of lung cancer deaths and 5 percent of cardiopulmonary deaths.¹⁷

In 2019, MAX launched an electronic mobility program that has the potential to deliver both safe and efficient transport to end-consumers, and significantly reduce local air pollution and greenhouse gas emissions from standard petrol bikes. The initiative started by retrofitting a petrol-powered motorcycle taxi to be a fully electric bike for the first time in Nigeria, dubbed the MAX e-series 1. MAX has ambitious plans to upgrade the e-bike technology and build a network of battery charging and swapping stations through a pilot in Lagos in 2020.

Drivers and end-customers interviewed in this study indicated significant interest in using e-bikes if MAX can deliver the same service (reach time for hail, trip times, no disruption to charge batteries, etc.) at a similar price level. Respondents were particularly interested in the e-bike's potential to reduce local air and noise pollution, and the visibility of having a domestic Nigerian company lead the way.

15 World Health Organization <https://www.who.int/sustainable-development/transport/health-risks/climate-impacts/en/>

16 <https://www.responsibility.com/en/targeting-sustainable-mobility>

17 World Health Organization <https://www.who.int/sustainable-development/transport/health-risks/climate-impacts/en/>

