

Boda Boda – Uganda’s Rural and Urban Low-Capacity Transport Services

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ABSTRACT: Bicycle and motorcycle-based *boda boda* are a Ugandan innovation that extends the range of transport services found in most of Africa. They provide a short-distance, low-capacity service able to serve low-density demands, and those where access is physically restricted and cannot be met by conventional public transport. Because of low incomes and the high unit cost of the services the poor benefit mainly through employment in the industry.

RESUMÉ: Le transport public par bicyclettes et par motocyclettes (*boda boda*) est une invention ougandaise qui vient augmenter la variété des services des transports en Afrique Subsaharienne. Les *boda boda* offrent un service de transport de faible capacité sur de courtes distances. Ils sont capables de satisfaire une demande de transport de faible densité et dans des zones inaccessibles par le transport conventionnel. Compte tenu de leur coûts d’exploitation élevés, les avantages des *boda boda* sont surtout réduits à la création d’emplois pour les pauvres.

1 INTRODUCTION

One of the puzzles of the African transport sector is that, with a few isolated exceptions, it suffers from what has been called the ‘missing middle’ (Pankaj 1991). Movement of people and goods goes from walking and headloading to the truck and bus in one technological leap. There is nothing much in between. In comparison with Asia there has been little use of animal, bicycle, or motorcycle-based technologies, i.e. the sector lacks *flexibility in service provision*.¹ This has been equally true in urban and rural areas, although the situation is starting to change with the development of passenger-carrying motorcycle services in West Africa (Howe & Iyiola Oni 1996, Anon 1997).

Boda boda transport services are a Ugandan innovation that has grown from small beginnings in the 1960s in the border region with Kenya (Malmberg-Calvo, 1994). The term itself is a corruption of the English ‘border border’. They mainly provide a passenger taxi service, although they can sometimes be hired to move goods. The original services were provided on a man’s bicycle,

equipped with a padded cushion fitted over the rear carrier. In

the early 1990’s bicycle-based carriers were complemented by, and compete with, light motorcycles that have greatly extended the range and load carriage of services.

This paper describes the nature of the *boda boda* phenomena with a special emphasis on the benefits they have brought to Uganda’s poor. It is based on household surveys, and interviews with key stakeholders, operators and users. The studies covered both urban and rural areas, and are part of a Department for International Development (DFID) financed research project into ‘Sustainable Livelihoods, Mobility and Access Needs (SLAM)’, being undertaken in Uganda and Zimbabwe, and which is reported on in another paper at this conference.

2 HISTORY

Confusingly both bicycle and motorcycle services are often known by the same name *boda boda*, although *machala* (Western Uganda) or *zabala* (Mukono District) are preferred in some areas for the motorcycle services (Leyland, 1999). We use the

¹ This situation does not exist in isolation. Africa also has a weaker industrial base and lower population (market) density about a sixth that prevailing in much of Asia.

term *boda boda* for both bicycle-based and motorcycle services since it is the most commonly used term.

low-density demands, or those where access is restricted by the width or quality of the route. Taxis do not find it profitable to go to many villages due to insufficient demand. Equally they physically cannot use the footpaths and tracks that provide access to many low-income urban settlements. *Boda boda* operate from 'stands' in towns, in trading centres, and at the passenger service stops along main roads providing access to feeder routes. On these routes they are the dominant service in many areas of the country, both rural and urban.

The introduction of motorcycle-based services is

Table 1: Newly registered motorcycles 1988 – 2000

Year	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Motorcycles	755	685	1770	1729	1248	1744	4866	1103	16106	18798	13730	14047	9093
Change %		5.5	-6.8	-3.2	-4.7	29.4	101.3	64.9	29.1	16.2	-29.6	4.6	-26.6

Source: National Transport Date Base

The size and growth of the motor vehicle fleet in Uganda are subjects of considerable uncertainty due to inconsistencies in official statistics. However, it is clear that there was rapid expansion in the first two thirds of the 1990's, with a substantial slow-down after the end of 1996. Motorcycles appear to have increased in number by a factor of 14, more than double that of the nearest motorized vehicle (pickups and 4-WD). However, the number of newly registered motorcycles has declined by almost 50% since 1997 (Table 1). Undoubtedly a contributory factor to the previous growth of the industry was ease of entry into the market. In 1991 government restrictions on the import of vehicles more than five years old were relaxed. A recent sample analysis of the Ministry of Finance vehicle database shows that the import of used vehicles is now the principal means of supplying the Ugandan market, and in 1999 some 90% of those newly registered were secondhand.

3 REGULATION AND ORGANISATION

It has proved difficult for the government to regulate the *boda boda* industry. However, some operational discipline is provided by the 'associations', to which the majority of *boda boda* operators belong, although most have only a local jurisdiction.² Attempts to form a national organization have been

² Many use the term association in their title, but in other cases it is a club. All function in effect as unions or co-operatives.

Both vehicles are unusual in providing a short-distance, low-capacity service that is able to serve

reported to have resulted from the initiative of a local firm, BMK (Uganda) Ltd. A trade visit to Cyprus in 1992 exposed the owner to the use by local farmers of motorcycles. This example, and the knowledge that Japan disposed of large numbers of second-hand and reconditioned motorcycles, led to their introduction into Uganda in the same year. BMK was alone in the market until 1994 when several other firms followed. It was at this time that the phenomenon appears to have taken off as indicated by the figures for newly registered vehicles in Table 1.

defeated by the chronic instability that plagues most associations.

Members of an association pay an annual entry fee in the range 6000-10,000 Ushs³. The association represents them in cases of harassment by security personnel, traces members in cases of theft, or their relatives if there is an accident, and through their 'stage committees' enforce discipline and hygiene through fines, suspension of membership and the right to operate, and other sanctions. In some cases the association also has a semi-banking (savings) and credit role for members.

4 OPERATIONS

Bicycle *boda boda* have spread to most areas of Uganda and parts of Kenya where the terrain permits operations. They operate in only a few flat parts of the capital Kampala, in competition with motorcycles, but traffic and terrain bar them from most of the area. In cities where the terrain is flat they predominate and far outnumber motorcycles, mainly due to the cheaper fares they are able to offer and the generally short trip distances that appear to dominate.⁴

There are clear differences in the ownership patterns of bicycle and motorcycle *boda boda*. Most bicycle *boda boda* (71%) are operated by the owner, compared to 44% of motorcycles. A further 13% of

³ Current exchange rate is US\$1.00 = 1,700 Uganda Shillings

⁴ Household surveys show that mean trip length varies with income from 1.3 – 5.4 kms, although most operators claim that they seldom exceed 3 kms.

bicycles belong to the family or close relative, and a similar proportion of motorcycles. Correspondingly, hiring of bicycles for operation comprises about 16% of the total, but 56% of motorcycles.

The motorcycles range in size from 50 to 250 cc engine capacity. Operators show a preference for the smaller sizes. The main considerations seem to be purchase cost - a 50cc motorcycle costs 1.4 million Ushs (US\$820) and one of 80cc 1.7 Million Ushs (US\$1000) - and fuel economy. The annual licence fee is also charged at 145 Ushs (US\$0.085) per cc per 12 months (i.e. US\$4.27 for a 50cc motorcycle), so operating costs are higher for the larger motorcycles, yet the small engine clearly limits the payload and range of operations. Larger off-road motorcycles, up to 250cc, are used in the western border regions because they make long distance trips into the Congo with goods.

Boda boda primarily provide three types of - (predominantly) - short-distance services: (i) within the main urban areas, where they compete with conventional sole hire taxis and *matatus*; (ii) as feeders to urban areas on routes that - due either to the low density of demand or the roughness of the route - are unattractive to *matatus*; and (iii) as feeders to the main roads in which role they tend to complement *matatu* and large capacity bus services.

It is very difficult to estimate the scale of *boda boda* operations, more so in the case of bicycles than motorcycles. The total fleet of bicycles can be estimated from the Ugandan national household survey, which records the percentage of households owning a bicycle in different regions of the country (Uganda Bureau of Statistics, 2001). This source yields a figure of 1.7 million. These are used to provide personal mobility, for dedicated rural goods transport, and *boda boda* services, however, the split between these three functions is not known. Three independent, albeit crude, estimates all converge on a *boda boda* fleet of about 200,000.

The motorcycle fleet can be estimated from new vehicle registration statistics (Table 1). Between 1994, thought to be the point of service take-off, and 2000 some 90,000 motorcycles were imported. The overwhelming majority of these are operated commercially and - allowing for scrapping due to old age and accidents, and pre-1994 baseline import levels to reflect non-commercial operations - then the current national fleet of motorcycle *boda boda* is about 70,000.

Currently a typical short stage (0-1 km) fare differential would be 500 Ushs (US\$0.28) by motorcycle and 300 Ushs (US\$0.17) by bicycle. Motorcycle fares per km vary in the range 125 Ushs (US\$0.07) to 210 Ushs (US\$ 0.12) with the lower rates applying to the longer trips up to 16 kms. Comparable inter-urban bus fares per passenger are around 31 Ushs on paved

routes and 68 Ushs on unpaved routes (Benmaamar *et.al.* 2001). Thus, motorcycle *boda bodas* are 2-7 times more expensive than bus fares. However, they are cheaper than sole hire taxi services, which realistically are their most likely competitors in cities.

The number of passengers is very dependent on the location of the stage and competition, with the relatively wealthy city centres generating proportionately more, but shorter, trips than small towns or rural feeder routes that have fewer but longer journeys. Also, not all operators work continuously - many take time off for other activities and occupations. Surveys of bicycle *boda boda* operators in a secondary city (Jinja) found them carrying 35-160 passengers per week, with a mean of 86, or 12 per day.

In Kampala bicycle operators claimed substantially higher numbers of passengers than in Jinja, in the range 75-330 per week, with a mean of 153. In both cities the claimed passengers correlate closely ($r^2 = 0.86$) with stated earnings, which gives credence to the figures. These average 42,300 shs (US\$24) per week within a range of 12,000 - 107,000 shs (US\$7-59).

Motorcycle *boda boda* exhibit a similar phenomenon to bicycles with the average number of city centre passengers (64) being double those in the peri-urban area of Seeta (32). In Kampala motorcycle operators have a similar range to bicycle operators in Jinja, 18-160 passengers per week.

Stated earnings for motorcycle operators differ for owners and hirers, and by location. Owner earnings in Kampala (100,400 shs per week or US\$56) are almost double those of hirers (54,200 shs or US\$30), but they do have additional costs, especially vehicle depreciation and major repairs. Peri-urban areas yield substantially lower earnings for owners (54,200 shs per week or US\$30).

5 OPERATORS

Operation of both service types is an exclusively male preserve. There is no obvious reason why women should not operate motorcycles other than custom and culture.

83% of bicycle and 80% of motorcycle operators view the provision of *boda boda* services as their main occupation. The remainder combine vehicle operation with a variety of other income earning activities.

Among bicycle operators 67% are married, compared to 81% of motorcyclists, probably reflecting the relative 'youth' of the former. The HIV/AIDS pandemic means that many operators support significantly more dependants than might be expected

from their comparatively youthful age distribution. As expected dependency is much higher among married than unmarried operators, and slightly higher in

both categories for bicycle than motorcycle operators, although it is not clear why (Table 2).

Table 2: Number of dependents of married and unmarried *boda boda* operators

Operators	Number of dependants	
	Married	Unmarried
Bicycle	7.3	1.7
Motorcycle	6.2	0.5

Allowing for the proportion married and the operators themselves, an average *boda boda* provides livelihood support to a little over 6 people. Given the previous estimates of the size of the industry these figures imply that about 1.6 million people depend on it for part of their livelihood, which represents about 7% of Uganda's population.

6 USERS

Measurements at the household level (Table 3) show that bicycles account for 8 – 11% of household trips and motorcycles 1 – 3%. Bicycle use, however, tends to decline with income and motorcycle to increase. The surveys indicate that men are more numerous users (61%) of *boda boda* services than women (39%).

Table 3: Trip mode share by income group

Income Group	Mode share (%)							
	Walk	Bicycle	Motorcycle	Car	Shared taxis	Bus	Staff bus	Other
Low	75.1	9.5	1.2	1.6	12.2	0.1	0.0	0.1
Medium	68.8	10.7	1.7	4.1	14.4	0.0	0.0	0.3
High	52.9	7.9	3.2	22.4	11.3	0.0	1.6	0.5
Average	64.5	9.4	2.2	10.4	12.6	0.0	0.6	0.3

Source: SLAM Household surveys 2001.

Interviews showed that users of either type of *boda boda* are drawn mainly from labourers, the business community, students, and health facility patients. People in wage and salaried employment accounted for a little over 43% of users, the self-employed about 38%, and students (18%).

For both men and women it is the speed and convenience of motorcycles that seems to be most prized especially when: there are no taxis available, a door-to-door service is required, or the user is in a hurry. Some operators are equipped with mobile phones and hence can be summoned. Tiredness, wet weather, terrain and security for women (relative to walking) are also usage factors.

The main reasons for using bicycle-based services rather than motorcycle are to save money, due to the short distance travelled, and no other choice, especially in rural areas. Load carriage, availability, and acceptability of a slower journey were also given as usage factors.

The SLAM household survey results in Table 4 show that within each of the categories there is

considerable variation in mean income, due to location. In each category village incomes are substantially the lowest. Household expenditure on transport is more uniform between locations than income, with Jinja households consistently the lowest, perhaps because it is dominated by (cheap) bicycle *boda boda* services. The percentage of household expenditure on transport increases broadly with income from a mean of 6.5% to 10.3%. Constraints of income and high fares ensure that the poorest group make only limited use of *boda boda* services.

For over 90% of men and women users *boda boda* services have resulted in significant changes in lifestyle by increasing the range and number of the activities in which they engage. They have also enabled them to save time and be more punctual; to make activities easier; and increase their personal performance and output. About 60% of male and 38% of female users say that use of *boda boda* services has resulted in increased income. Prominent among these are traders in bricks, chickens, fish, food, and *waragi*.⁵

⁵ Local alcoholic spirit in high demand in major urban areas.

Table 4: Household monthly income and expenditure on transport

Location	Poor		Medium		High	
	Monthly Income Ushs	Expenditure On Transport %	Monthly Income Ushs	Expenditure on Transport %	Monthly Income Ushs	Expenditure on Transport %
Kampala	134,640 (77)	6.5	611,400 (349)	10.6	1,631, 230 (932)	13.5
Peri-Urban	99,750 (57)	8.4	308,000 (176)	10.3	967,750 (553)	10.8
Jinja	91,000 (52)	5.4	327,250 (187)	5.9	1,697, 500 (970)	7.5
Village	17,500 (10)	5.7	98,000 (56)	8.0	619,500 (354)	9.4
MEAN	87,500 (50)	6.5	334,250 (191)	8.7	1,230, 250 (703)	10.3

Source: SLAM Household surveys 2001.
(Figures in brackets are US \$)

7 MAIN PROBLEMS

There is an unfortunate history of instability attached to the associations that most operators belong to, with recurrent take-overs, financial mis-management and organisational collapse. They have been formed from within the industry and by local authority officials, but still instability persists.

Existing and would-be owners and operators face a number of problems. The main ones are the high cost of entry to the industry, lack of credit facilities, difficulty in obtaining spares, and poor maintenance facilities and skills outside of the main cities.

Despite the best efforts of their associations both types of *boda boda* operators have a poor profile among users. Men complain of reckless, inexperienced driving and disdain for traffic rules; dishonesty in overcharging, not having change and actively thieving; poor appearance and personal hygiene; and abusive and arrogant treatment of clients, and coarse behaviour towards women.

Accidents are certainly common with reckless driving and drunkenness alleged to be the main contributory factors (Amimo, 2001). There is some evidence that casualties resulting from accidents involving *boda boda* occur disproportionately to women (Amimo, 2001). It is not obvious why this should be the case other than their propensity to sit sidesaddle, which implies they are more easily ejected from the vehicles (Iga, 2002).

8 BENEFITS TO THE POOR

There are two mechanisms by which the poor can benefit from the operation of bicycle and motorcycle

boda boda: from the employment created, and using the services provided.

The surveys showed that the majority of the operators are drawn from the least educated classes. Among motorcycle operators the low proportion owning their own vehicles, and the high proportion who are married with dependents, also indicate that they are likely to be from the lowest income category. Thus, the majority of the estimated at 1.6 million who are directly dependent on the industry can be assumed to be drawn from Uganda's poorest population segment.

Household expenditure data suggests that the poorest stratum of the population only occasionally use *boda boda* services, low incomes and the high unit cost of fares being the binding constraints to increased usage. However, those engaged in formal or informal sector wage employment seem likely to have received benefits from the enhancement of their income earning activities through the greater mobility afforded by *boda boda* usage.

9 CONCLUSIONS

It is clear that the *boda boda* industry has made a significant and unique contribution to the conduct of economic and social activities in Uganda by providing services in circumstances where the main alternative is to walk, which is slow, expensive as a means of load carriage, and of limited capacity. The low-capacity of *boda boda* enables them to service demands that other forms of transport find uneconomic, albeit at a relatively high unit travel cost. They provide service coverage in previously inac-

cessible rural and urban areas, and also enhance the profitability and effectiveness of more conventional transport services by feeding and distributing passengers to and from major stops.

Greater use of *boda boda* by the poor requires an increase in their income, or a reduction in fares through greater competition and lower vehicle operating costs. The first measure is not really a transport sector issue. Elimination of unnecessary government taxes on entry to the industry, and the establishment of credit finance schemes to widen ownership and increase competition, seem the best way to achieve a short-term lowering of operating costs and fares.

The main dis-benefits associated with *boda boda* services are their poor safety record and the pollution created in urban areas by concentrations of motorcycles. Operator education and training, to be provided by the associations, offer the main ways of addressing these issues, backed by an appropriate programme of enforcement. Specific measures may need to be identified to address the issue of motorcycle exhaust pollution, as this is likely to become critical in Kampala in the near future.

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REFERENCES

- Amimo, P. (2001). Busia's wheels of survival. *Daily Nation*, Wednesday January 17, 2001.
- Anon. (1997). The 'Zemidans' of Cotonou. *The Courier*, Number 166, Pg 17, November-December.
- Benmaamar, M., S. Ellis and C. Dunkerley (2001). Options for improving vehicle operations in SSA: a case study in Uganda. July, *DFID Transport Resource Centre Scheme (TRL)*
- Howe, J. and S. Iyiola Oni (1996). Nigeria downsizes to motorbikes. *Sustainable Transport*, Number 6, Summer 1996. www.itdp.org
- Iga, H. K. (2002). Impact of bicycle/motorcycle taxi services (*boda boda*) on women's travel needs in Uganda: a case study of Mpigi District. (in) Priyanthi Fernando and Gina Porter (eds) *Balancing the load: women, gender and transport*. London, *The International Forum for Rural Transport and Development*. (Zed Books).
- Leyland, J. (1999). Rural travel and transport in Western Uganda –scoping study. November, *Under assignment to DFID, Uganda*.
- Malmberg Calvo, C. (1994). Case study on intermediate means of transport: bicycles and rural women in Uganda. *SSATP Working Paper No. 12*. *The World Bank and Economic Commission for Africa*.
- Pankaj, T. (1991). Designing low-cost rural transport components to reach the poor. *Infrastructure Notes Transport No. RD-2*. March, Washington, DC (*The World Bank*).
- Uganda Bureau of Statistics (2001). Uganda national household survey 1999/2000: report on the socio-economic survey. January.