2. Characteristics of Bicycle Usage in Eastern Uganda

2.1 Overview of Use of Bicycles

Bicycles are a common and versatile means of transport in Uganda. They are used for personal travel and for the movement of goods or passengers. Although bicycles are intensively used in all flat areas of the country, they seem particularly popular in the eastern and northern regions. Virtually any load can be carried on a bicycle - people, bags of crops, matoke (the Ugandan cooking banana), iron sheets (2m long), charcoal, sewing machines, jerrycans of beer and water, firewood, cases of soft drinks, pigs, goats, another bicycle, etc.

In rural areas, bicycles are mainly used for travel outside the village such as going to a market, travel to a nearby center or town, going to work or for a social visit. They are also used for transport services as in the case of rural traders who buy crops in the villages and transport them to markets for further sale. Another more urban form of transport service is performed by bicycle riders who take passengers or goods to their destinations both within towns and local trading centers, as well as to and from surrounding rural areas. They are called boda-boda bicycles and serve as a kind of low-cost taxi.

2.2 Traffic Counts

Traffic counts serve as an indicator of the extent to which people travel by bicycle in rural areas. The Ministry of Local Government (MOLG) has carried out traffic counts on 22 road links in Mbale district and 47 road links in Tororo district. Table 2.1 presents the traffic flows by vehicle category. An earlier report[5] analyzed the variations in vehicle intensity on these roads.

Additionally, the VLTTS recorded one-week traffic flows of all vehicles on the tarmac road through Nampanga, on the good earth road through Bumudu, and all departing traffic from Bukisimamu village. Table 2.2 shows the average vehicle flow per day on the respective roads, and the variations in traffic flows over one week.

Table 2.1 shows that bicycles are by far the largest vehicle category on these roads:

- In Mbale district, on rural roads carrying between 1 and 111 motor vehicles per day, there are on average more than seven times as many bicycles as motor vehicles.
- In Mbale district, on 6 of the 22 roads surveyed, the number of bicycles exceeded the number of pedestrians.
- In Tororo district, on rural roads carrying between 0 and 71 motor vehicles per day, there are on average more than 40 times as many bicycles as motor vehicles.
- In Tororo district, on 9 of the 47 roads surveyed, the number of bicycles exceeded the number of pedestrians.

[5] Barwell, Ian. 1991. *Report of Project Preparation Study Consultant on Promotion of Bicycle Use and Upgrading of Private Report Workshops*. Uganda Transport Project. Feeder Roads Component. Geneva: ILO.

The VLTTS traffic counts in Table 2.2 confirm that bicycles are the major vehicle category on the three differently classified roads:

- In Nampanga village on the tarmac road carrying between 231 and 323 motor vehicles per day, there are on average 1.6 bicycles per motor vehicle (9.6 percent of all bicycles are used by rural traders, 2.6 percent are boda-boda transport operators).
- In Nampanga village, the number of bicycles exceeded the number of pedestrians.
- In Bumudu village, on the good earth road carrying between 108 and 181 motor vehicles per day, there are, on average, 1.3 bicycles per motor vehicle (on average 40 percent of all bicycles are used by rural traders).
- In Bukisimamu village, on the poor feeder road carrying between three and fifteen motor vehicles per day, there are 6.3 bicycles per motor vehicle, (61 percent of the bicycles are used by matoke traders. The proportion of bicycle traders could have been even higher if beer traders' bicycles had not been recorded as personal transport bicycles because they leave without loads - empty jerrycans - when they travel out from the village).

The data from the VLTTS villages suggests that the worse the infrastructure, the higher the proportion of total bicycles performing transport services as rural trade vehicles. That is to say, the further away from good roads, the more significant the proportion of cargo transported by bicycle. At the same time, the better the road surface, the greater the absolute level of both motor vehicles and bicycles.

2.3 Bicycle Usage for Personal Transport and Travel

Bicycle Ownership

According to the VLTSS in Mbale district, 15 percent of the households interviewed owned bicycles. Only one household, in Bumudu, had more than one bicycle. Table 2.3 displays the distribution of the 24 bicycles identified in the survey villages. A total of three bicycles (12.5 percent) were not working. Fifty-five percent of the bicycles in working order were found in Nampanga, the village located on the tarmac road. There, almost every third household owned a bicycle. Bumudu which is the most accessible of the mountain villages accounted for 36 percent of the working bicycles, that is one in five households possessed a bicycle. The remaining 9 percent, 2 working bicycles, belonged to the households in Buwanyama, where only 5 percent of the households owned bicycles. There were no bicycles in the most inaccessible village.

Bicycle ownership in Tororo district was estimated, during discussions with the various villages visited, to range between 20 percent of households in Magodesi village on the main road between Tororo and Mbale, and 50 percent of households in Busia in the south. Bicycle ownership tends to be higher in flatlands. This is seen both when comparing bicycle ownership between different parts of the interior of Mbale district which has varying terrain, as well as when comparing bicycle ownership in Mbale district, which is relatively mountainous, to bicycle ownership in Tororo district which is flat overall. Moreover, there is not necessarily a relation between high bicycle density and the location of villages along the tarmac road, as is evidenced by the high bicycle density observed on the earth roads around Busia.

Table 2.1: One-week Traffic Count Data on a Set of Road Links in Mbale and Tororo District

		Pedest-rians	Bicycles	Donkeys	Motor-Cycles	Cars	Pick-Ups	Four-Wheel Drives	Mini-Buses	Buses	Light Trucks	Medium Trucks	Heavy Trucks	Other	Total Motor Vehicles Per Day[a]
MOLG Survey Tororo District (47 Road Links)	Average	889	596	NC[b]	NC	1.7	3.2	0.6	0.6	0.2	1.1	0.8	1.0	4.5	13.7
	Maximum	3,310	3,064	NC	NC	9.0	18.0	5.0	7.0	7.0	10.0	6.0	10.0	70.0	71.0
	Minimum	212	114	NC	NC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MOLG Survey Mbale District (22 Road Links)	Average	1,012	224	NC	NC	2.3	10.3	1.8	0.4	0.6	1.6	4.4	0.4	10.6	32.4
	Maximum	3,225	1,106	NC	NC	11.0	71.0	7.0	3.0	9.0	9.0	22.0	5.0	98.0	111.0
	Minimum	37	6	NC	NC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0

Table 2.2: Traffic Count Data on Use of Bicycles on 3 VLTTS Roads in Mbale District

Road	Daily Intensity	Pedest-rians	BICYCLES					Motor-Cycles	Pick-Ups[c]	Medium Trucks	Buses	Tractors	Total Motor Vehicles
			Total No.	Transporting Matoke	Transporting Beer	Boda-Boda	Personal Transport						
Nampanga Village Tarmac Road	Average	121	461	38	6	12	405	17	221	42	0	2	282
	Maximum	180	625	70	14	30	511	22	238	58	0	5	323
	Minimum	141	315	15	2	5	293	12	196	22	0	1	231
Bumudu Village Good Earth Road	Average		201	53	27	0	121	7	132	15	1	0	155
	Maximum	NC[a]	392	143	69	0	180	17	142	21	1	0	181
	Minimum		119	1	44	0	74	2	100	5	1	0	108
Bukisimamu Village Poor Feeder Road	Average		28	17	0	0	11	0	6	1	0	0	7
	Maximum	NC	94	58	0	0	36	0	11	4	0	0	15
	Minimum		0	0	0	0	0	0	3	0	0	0	3

a. Assumes "Other" are all motor vehicles.
b. NC - Category not used in traffic count.
c. In the survey, most pick-ups were used for transport of passengers, that is as private buses (generally called "taxis" in Uganda).

In Busia, soils are poor and people live off the lakeside and inter-district trade with neighboring Iganga district. Bicycles are the only available means of transport between these areas. In fact, bicycles are so essential that if people have to choose "they rather buy a bicycle than send a child to school." (Quote from Mr. Gakwandi, Asst. District Executive Secretary, Busia Subdistrict.)

Social and Economic Characteristics of Bicycle Owners

All of the bicycle-owning households in the VLTTS villages were male headed. The typical head of household was in his mid-30s. Each family had an average of 6.8 members, ranging from 3 to 14.

Table 2.4 indicates that in Nampanga village, 10 out of the 12 households owning working bicycles households (83 percent) had annual incomes above the average for the village. Only two of the households with bicycles in working condition had an income below the village average. On the other hand, the two broken bicycles belonged to the two households with the lowest income in the sample. Insufficient levels of income thus may prevent households from repairing their bicycles. The households with the non-functioning bicycles had 4 and 12 members respectively which suggests that household size does not necessarily influence the earnings of a family.

This pattern was not so strong in Bumudu and Buwanyama, where only a total of four of the eight households with working bicycles had above average incomes. In Bumudu, the household with the highest income (a shopkeeper) had the non-operational bicycle. At the same time, household sizes tend to be below the overall average. Thus, in these mountain villages, there appears to be no clear correlation between household income, size and bicycle ownership. This could be a reflection of the limited usefulness of bicycles in mountainous terrain.

The main source of income of the majority (77 percent) of those with working bicycles was derived from non-agricultural activities such as small businesses, beer brewing and crafts, regular employment and remittances. Only one of the households, however, used the bicycle to travel to work. Thus, it does not appear to be the bicycle which enables the household to generate income, but rather the higher income which has made it possible to buy the bicycle.

Only 5 (23 percent) of those with working bicycles relied on the sale of agricultural produce as their main source of income and they tended to have below average incomes. Their average annual income was Ush.100,872 which is not much more than the cost of a bicycle in the area (about Ush.65,000). This suggests that their bicycles have not been acquired recently.

Similarly, the two households with broken bicycles fit this pattern of being reliant on low agricultural incomes. In fact, village discussions indicate that many households have bicycles which are 20 or more years old. Most of these bicycles have been inherited and have been non-operational for a long time.

Table 2.3: Bicycle Ownership in the VLTTS Villages

Village	No. of h/h Interviewed	Total			Working Bicycles			Broken Bicycles		
		No. of h/h owning bicycle	% h/h owning bicycle	No. of bicycles owned	No. of h/h owning	% h/h owning	No. of bicycles	No. of h/h owning	% h/h owning	No. of bicycles
Nampanga	42	14	33%	14	12	29%	12	2	5%	2
Bumudu	42	9	17%	10	8	14%	9	1	2%	1
Buwanyama	42	3	5%	3	2	5%	2	1	0%	1
Bukisimamu	42	0	0%	0	0	0%	0	0	0%	0
Total	168	26	14%	27	22	12%	23	4	7%	4

Table 2.4: Income of VLTTS Households with Bicycles in Working Order

Village	Below average	Above average	Average Income		Income range BC owning h/h
			Village	BC owning h/h	
Nampanga	2	10	183,351	290,384	58,500 - 670,516
Bumudu	4	4	106,528	100,384	4,413 - 259,850
Buwanyama	2	0	108,529	76,524	72,528 - 80,520

Trip Purposes

Bicycles are mainly used by their owners for external travel needs. The extent to which the households in the VLTTS villages undertake external travel for one week in September is shown in Table 2.5. In Nampanga, 60 percent of the households travel to places outside the village. Of these external trips 23 percent are by bicycle. In Bumudu and Buwanyama 48 percent and 40 percent respectively of the households travelled externally; 7 percent in Bumudu and 5 percent in Buwanyama of trips are by bicycle. In Bukisimamu, one-third of the households surveyed undertake a trip outside the village; however, none of these were by bicycle. These findings suggest that the further away a village is from Mbale, the smaller the number of external trips. Also, it seems that the steeper the terrain, the lower the proportion of trips by bicycle.

Table 2.5: External Travel for 1 Week in September

Village	No. of h/h that do not travel	No. of h/h that do travel	Total no. of trips	% of trips on bicycle
Nampanga	17	25 (60%)	81	23.5%
Bumudu	22	20 (48%)	29	7.0%
Buwanyama	25	17 (40%)	19	5.0%
Bukisimamu	28	14 (33%)	22	0.0%

In the survey area, the most frequent use of bicycles was for trips to markets and to local trading centers to effect purchases, or occasionally sales, of food and household items. At a large market - Mile 8 - on the Mbale-Tororo road, there is a fenced area designated for bicycle parking where market users can leave their bicycles with an attendant for a fee. At the time of the team's visit, approximately 90 bicycles were parked in this area.

Bicycles also serve to bring sick family members to the clinic. In Buwanyama village the bicycles are used for trips to the grinding mill. Only in one survey household, in Nampanga, is the bicycle used for regular travel to and from work.

Two of the households in Nampanga village used their bicycles to ferry water in the dry season. Water collection is generally considered more of a problem on the plains than in the mountains. In the dry season, many streams and wells dry up and households may have to travel further from their village to collect water. In the mountains, where streams are often located in steep-sided valleys, the use of a bicycle to collect water becomes very difficult.

Most transport activities immediately in and around the village are performed by women and children. They have limited access to bicycles and there was no evidence of bicycles being used for collection of firewood or the transport of crops from the field to the home. It was the men who performed the transport or travel activity, in all activities where bicycles were used. Thus, in the case of grinding, which is generally a woman's task, the bicycle facilitated the transfer of responsibility to a man. Also, in the two households where water was transported on a bicycle, the

responsibility for water collection was transferred from females to males during the period of the dry season.

Households that own bicycles thus have better access to markets and health clinics. They can therefore acquire products which are not available in the village and have easier access to medical services.

Sources of Finance for Bicycle Purchases

Most owners interviewed said that they bought their bicycles after they had sold their cash crop harvest. Coffee and rice are the main cash crops in the two districts, and each has a specific harvesting time. Bicycle retailers confirmed that the majority of customers who bought bicycles for personal use did so right after the harvesting season of rice or coffee. Occasionally, large rice traders from Kampala purchase a "box" of 6 bicycles and bring them to the Doko rice scheme in Tororo district where they exchange them for rice. This confirms that most bicycle customers buy when they have received a lump sum of money rather than save up for a long period of time to make the purchase.

It is difficult to judge how bicycle ownership has changed over the last decade. During the period of political instability, villages were repeatedly looted and a large number of bicycles disappeared. During this period, coffee production also declined. Discussions with both bicycle operators and retailers in Mbale and Tororo town indicate, however, that the number of bicycles is increasing.

The main increase appears to be within the transport services category, primarily boda-boda bicycles, and not bicycles for personal transport use.

There are many non-functioning bicycles around. The cost of returning them to operating condition was estimated by the owners to be between Ush.5,000 and 20,000. When asked why they do not repair the bicycles, most of them said that they did not have the money. This could also be interpreted as saying that there are other, greater priorities for the limited funds of the rural household.

Constraints to Greater Use of Bicycles

The two major physical constraints to the use of bicycles are terrain and infrastructure; It obviously takes considerably more effort to ride a bicycle in a hilly area than on the flatland. Bicycle usage in mountainous areas is thus conditioned by this limitation. Hence, bicycles are more popular in flat areas because their range of usage is wider.

The condition of the roads over which the bicycle is ridden influences the size of the load that can be carried. Riders are frequently seen pushing their bicycles over stretches of poor road. If the condition of a road is poor over a long distance, the bicycle tends to become simply a "load carrier" rather than a means of personal transport. Otherwise, the rider must carry only very small loads in difficult terrain if he wants to ride rather than push.

Loads are carried on the rear rack, over the cross bar and on the handlebar. The rear-carrying racks in Uganda are made by local blacksmiths. They are wider and sturdier than those fitted to the bicycles at the factory. In spite of these adaptations, the physical effort of balancing and transporting goods on the bicycle still remains.

According to the national budget survey, the average annual household income in the eastern region was Ush.284,000 for the rural areas and Ush.594,000 for the urban areas. A bicycle would then cost approximately one-tenth of the annual income of an urban household, and a quarter that of the rural household. These figures may, however, be overestimated considering that the VLTTS indicated rural incomes to be closer to Ush.120,000. Using either figure, bicycle purchase remains a large expense for most rural households.

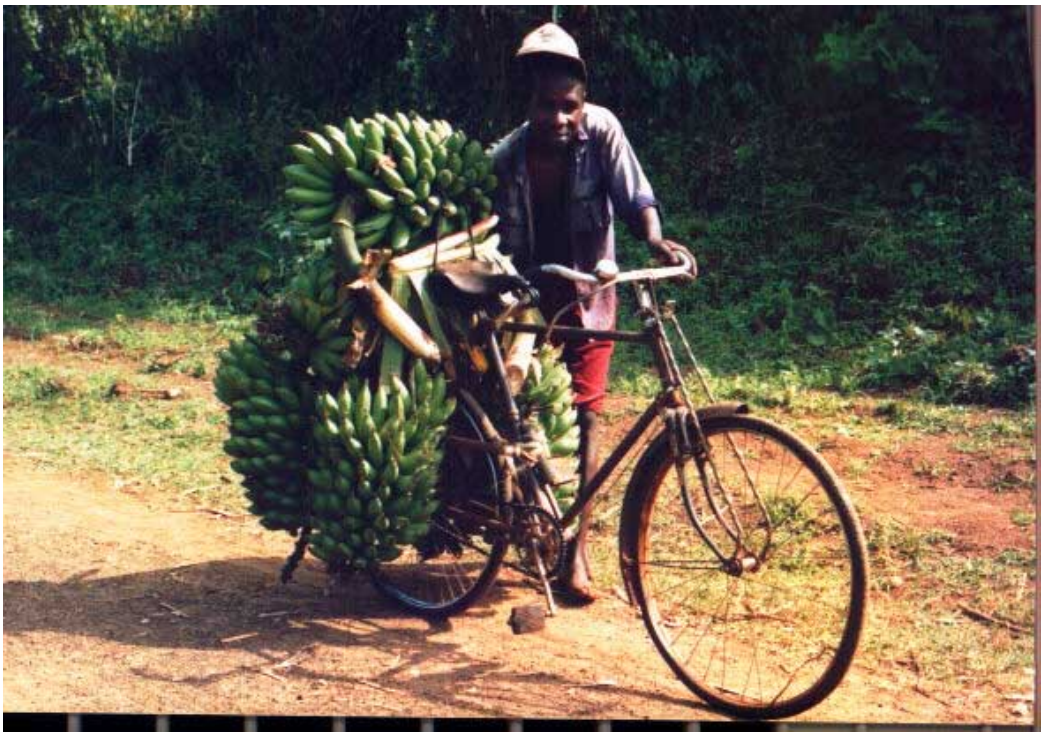
Summary

People own bicycles for a variety of reasons - income generation, social prestige, time/cost-saving on regular journeys. Bicycle ownership and usage can be a reflection of a specific pattern of life or culture in an area, terrain and infrastructure. Other important factors are the affordability and availability of alternative means of transport, which vary with income and location.

Bicycles facilitate access to social and economic services such as health clinics and markets. To a limited extent, bicycles also tend to bring about a transfer of transport responsibilities from women to men. The VLTTS results show that in 4 households (2.4 percent of total) - where bicycles were used for women's transport activities-the task was performed by a man. This is a trend that could be encouraged further by education and demonstration, particularly since the 17 remaining working bicycles in the survey sample were mainly used for external travel purposes.

All households on the flatland felt that bicycles are very useful. Even though the cost of buying a bicycle is high and increasing, the main problem is the need to pay the full amount at one time. It is difficult for the rural household to save, and therefore most bicycle buyers make their purchase immediately after the harvest season when they have received payment for their cash crops. Commonly, the farmers have to use part of this lump sum income to pay back accumulated debts and there may not be enough money to buy a bicycle if that was the intention. The availability of credit to overcome this problem might enable many more households to acquire a bicycle.

Poor road infrastructure also limits the extent to which bicycles can be used effectively. In addition to better road conditions, an improvement of the terrain performance of bicycles would also help overcome the constraints relating to poor infrastructure. In addition, with a reinforced rear rack or an improved bicycle design, it might be easier to transport water, or other domestic loads. Thus, with more versatile carrying aids, the potential usage of bicycles could be extended.



A typical rural trader carrying matoke

Boda-boda bicycles showing the padded cushion fitted over the rear rack

This informal roadside bicycle repair facility outside Tororo town is bustling with activity

A display of available bicycle spare parts at the repair facility above

2.4 Bicycle Transport Services - Rural Traders

There are small-scale traders/transporters for whom the bicycle is the chief means of earning a living. The most common types of products transported are matoke and local beer. In some areas, charcoal is also regularly ferried from rural areas to the main road for further sale.

Rural bicycle transporters can generally be categorized as middlemen. They purchase their loads directly from the producers in the villages and transport them to trading centers or markets where they sell the goods onward to retailers. Interviews were carried out with 15 traders on the road through Bumudu village over 10 days, with matoke transporters around the markets in Mbale and Tororo towns, and with a random sample of matoke traders on various feeder roads in both districts.

The average trader was 32 years old, ranging from 16 to 50. A few of them had just recently started this work while some seniors had been traders for up to 18 years. All of them were male and lived in the rural areas. They considered their work a full-time activity, and physically very demanding. Their average load weighs around 100 kg and, when travelling up-hill, riders have to push rather than ride the loaded bicycles.

Most matoke and beer traders have bicycles which are 10 years old or older. The newest bicycle encountered in the study was bought in 1987 (for Ush.15,000). Of the traders, interviewed 40 percent had purchased their bicycles second hand. The ones who had purchased their bicycles within the last two years had paid between Ush.10,000 and Ush.30,000.

All traders set out early in the morning. Matoke riders in the area of the VLTTS generally purchase their bunches from Buteza market near Bukisimamu, the most inaccessible of the survey villages. Thus, they are faced with difficult terrain not only when ferrying the produce but also when acquiring it. The typical trip from Buteza market to Mbale takes 4-5 hours. Considering that many of them have to travel 1-2 hours to reach the Buteza market and then spend some time in Mbale before they find a buyer and return home, their working day is approximately 10 hours. They perform this work 3-4 days per week. They prefer to sell their entire load to a retailer rather than to individual customers. After having found a buyer for the matoke, the traders commonly return home without a new load.

Both matoke and beer traders complained about the frequent breakage of their bicycles and the resulting cost of the repair. The most common repairs were due to punctures of tubes and tires, broken spokes and cones, brakes and bent wheels. On average, the bicycles needed repairs every three days. The traders attributed these frequent repairs to the conditions of the roads, and only reluctantly admitted to overloading their bicycles. The monthly repair cost, excluding tires, varies with the condition of the bicycle between Ush.2,000 and Ush.3,000.

There are two types of tires available in the area: the Gabon from China and the Nelson from India. The Gabon lasts about four months and costs Ush.8,000 while the lifetime of the Nelson is only one month and it costs Ush.3,500. Thus, in the long run, the Gabon is considerably more priceworthy. Yet, traders also use the Nelson due to limited funds. Many traders and boda-boda riders put a Gabon on the rear wheel, as it carries the greater load, and a Nelson on the front wheel. Monthly expenses for tires are estimated at about Ush.4,000.

Income of Matoke Traders

Most traders transport between 4 to 8 bunches of matoke, or about 6 on average. The matoke is carried on the rack and along the sides of the rear wheel. The price of a bunch sold by a producer in

a village varies, depending on the size and season, from Ush.700 to Ush.850. In the rainy season, there is more food available both on the plains and in the mountains and consequently prices are lower. The sale price in Mbale of a bunch of matoke in September 1991 was Ush.1,400, which is double or close to double the producer price. The matoke transporter in the survey earned between Ush.2,400 and Ush.4,800 daily before expenses.

Table 2.6 gives a breakdown of the operating characteristics and vehicle operating costs for matoke bicycle traders. Since there were some variations in the data collected from interviews with different traders, the range of results is also presented. The information in the table indicates that, once repairs are paid, matoke traders are left with a monthly income of Ush.47,900 excluding costs for depreciation. Depreciation is estimated at Ush.1,430 monthly, assuming that the price of a bicycle is below Ush.70,000 and that it works for 4 years. Their net monthly earnings would then reach Ush.46,470, equivalent to Ush.557,612 per annum. This means that they would have recovered their investment cost in only two months. Earnings would be even higher if a longer period for depreciation were applied, which may be warranted, considering the advanced age levels of the existing bicycle stock.

Among the matoke traders interviewed, 33 percent rented their bicycles for Ush.500 daily. The "rental" trader is responsible for all costs associated with the vehicle. His monthly income would thus be reduced to about Ush.40,310. Bicycles used for personal transport are generally lent out free of charge between villagers. However, if a bicycle is to be used for an income-generating activity, the owner will demand rent.

Income of Beer Traders

Beer traders in the VLTTS area live in the villages. They bring the beer into Buwalasi and Buyobo sub-counties from the surrounding areas. In the morning they travel with empty jerrycans towards the plains in Nakaloke sub-county and towards Kachumbala in Kumi district. The average return trip takes three hours, and the load is between 40 and 80 liters. The jerrycans are positioned across the rear rack, on the handle and over the crossbar.

Most beer traders work five days per week. They earn about Ush.1,600 per day. Once they have paid for repairs, tires and discounted for depreciation, their monthly income is around Ush.28,000, equivalent to Ush.335,600 per annum (see Table 2.7).

Two of the beer traders interviewed were employed riders and two rented their bicycles. As with the matoke traders who rented bicycles, all vehicle-related costs had to be born by the riders themselves. Thus, a beer rider who rents his bicycle (at approximately Ush.500 per day) earns Ush.17,133 monthly, that is Ush.205,600 per annum.

Table 2.6: Operating Characteristics and Vehicle Operating Costs: Matoke Traders in Mbale District

	Average	Range
Operating Characteristics		
Working days per week	3.5	3-4
Trips per week	3.5	3-4
Distance per one-way trip (km)	23	20-30
Distance per year (km)	8,372	6,240-12,480
Bunches per trip	6	4-8
Load per trip (kg)	100	70-160
Load per year (tonne)	18.2	10.9-33.3
Vehicle Operating Cost (Ush.)		
1. Investment:		
Total Cost	68,750	65,000-72,000
Life (years)	4	3-5
Annual Depreciation	17,188	13,000-24,000
2. Operating (per annum)		
General Maintenance	30,000	24,000-36,000
Tires and Tubes	50,400	
TOTAL	80,400	
Annual Gross Revenue (Ush.)	655,200	374,400-998,400
Annual Income - after costs and depreciation (Ush.)	557,612	264,000-911,000
Income to rider in case of a rented bicycle:		
2. **Vehicle Operating Cost** (per annum)		
General Maintenance	30,000	
Tires and Tubes	50,400	
Rent to Owner	91,000	
TOTAL	171,400	
Annual Gross Revenue (Ush.)	655,200	
Annual Income - after costs (Ush.)	483,800	

Summary

Annual income from matoke and beer traders is Ush.558,000 and Ush.336,000 respectively. This is higher than the averages for the VLTTS (Ush.122,000) and the national household budget survey for the rural areas of the Eastern region (Ush.284,000). There is no obvious reason why the traders would have overestimated their income, thus raising the question why there are not more rural traders when the pay-off is so high. One reason may be the difficulty in raising the funds for the initial investment i.e. the purchase of the bicycle. If this is true, then credit facilities for bicycle purchases would enable more people to become rural traders. Another reason could be that the job is very hard and therefore not very attractive.

Table 2.7: Operating Characteristics and Vehicle Operating Costs: Beer Traders in Mbale District

	Average	Range
Operating Characteristics		
Working days per week	5	5-6
Trips per week	5	5-6
Distance per one-way trip (km)	20	16-25
Distance per year (km)	10,400	8,320-15,600
Time per one year trip (min)	180	
Liters per trip	60	40-80
Load per trip (kg)	60	40-80
Load per year (tonne)	15.6	10.4-25
Vehicle Operating Cost (Ush.)		
1. Investment:		
Total Cost	68,750	65,000-72,000
Life (years)	4	3-5
Annual Depreciation	17,188	13,000-24,000
2. Operating (per annum)		
General Maintenance	30,000	24,000-36,000
Tires and Tubes	50,400	
TOTAL	80,400	
Annual Gross Revenue (Ush.)	416,000	277,333-665,600
Annual Income - after costs and depreciation (Ush.)	335,600	190,933-591,200
Income to rider in case of a rented bicycle:		
2. **Vehicle Operating Cost** (per annum)		
General Maintenance	30,000	
Tires and Tubes	50,400	
Rent to Owner	130,000	
TOTAL	210,400	
Annual Gross Revenue (Ush.)	416,000	
Annual Income - after costs (Ush.)	205,600	

2.5 Bicycle Transport Services - Boda-Boda Operators

Background

Boda-boda riders perform a type of taxi service. They operate "for hire" from stands in towns, in trading centers and at large bus stops along the main roads.

The boda-boda service originated in Busia in the southern part of Tororo district. During the period of the East African Community (1964 - 1977) there was unrestricted travel between the member countries. Ugandans who wished to travel from Kampala to Busia found it more convenient to board a bus bound for Nairobi and cross the Malaba border east of Tororo town into Kenya rather than to go directly to Busia. The passengers would get off in Kenya, from where they would cross back into Busia.

On the Kenyan side, motor vehicles could travel up to the border while on the Ugandan side there was a distance up to the town area where motor vehicles were not allowed to operate. It was in this area that the boda-boda transport service originated. Travellers to and from Busia were offered transport to the border by bicycle riders who called out their message to attract the clients: "Border-border, I'll take you to the border!" In the 1980s, partially as a result of the decrease in motor

vehicles, population growth and poor roads, the boda-boda taxi service was extended to other areas of Tororo and also adopted by surrounding districts.

Boda-Boda Services

The transport service is carried out on a man's bicycle. A padded cushion is fitted over the rear rack in order for the passenger to travel more comfortably. The cushion can easily be removed when the rack is needed for carrying a load rather than a passenger. By law, the bicycles have to be equipped with reflectors and mirrors. Frequently, the riders also add colorful decorations to their vehicles in order to render them more attractive-looking.

All boda-boda operators have to be licensed i.e. they have to belong to an association and receive a registration number from the police; this is both for tax and security reasons. When a rider becomes licensed he receives a metal plaque, showing his registration number, which is welded on to the rear mudguard. Some associations have also started to require their riders to wear a uniform shirt with their registration number stamped on the back.

Bicycles have to a certain extent replaced motor vehicle services. For example, an old car park by the traffic circle outside the main bank in Tororo town has over the years been transformed into a large boda-boda stand. Boda-boda bicycles also serve as a complementary means of transport to motorized vehicles. They take passengers to and from the bus and pick-up stands. In eastern Uganda, the first and last leg of a journey is frequently on the rear rack of a bicycle.

The boda-boda riders perform a useful service for the people in the towns and in the surrounding areas. Town women use boda-bodas as frequently as men, and it is common to see a traditionally dressed lady with a baby in her arms on the passenger seat. If a passenger has a large piece of luggage, boda-boda bicycles will often be employed, one for the passenger and one for the luggage.

Boda-boda transport services are a predominantly urban phenomenon. They exist where there are sufficient numbers of people to create a market, and where the terrain is flat or slightly undulating and the road surface is in a reasonable state of repair. If a heavy load is carried in the hillier areas of Mbale district, let alone a passenger, the rider are forced to get off and push the bicycle up the hill. Boda-boda riders frequently complain about uncooperative passengers who are reluctant to walk up a hill. Conversely, these passengers argue that they are paying to be transported and prefer to be pushed.

All boda-boda riders are men, and most are between 18 to 30 years old. Before they can apply for a license they must have obtained approval from the Resistance Committees at the village (RC1), parishes (RC2), and sub-county levels (RC3). They must also have paid their graduated tax, which effectively makes the minimum age 18 years. Most of the riders in the towns live in nearby villages or in the slum areas of the outskirts. The riders are generally school dropouts with limited possibilities of getting any other paid work.

Boda-Boda in Tororo

In Tororo district there are five major boda-boda centers - Busia, Buslowe, Kachonga, Merkit, and Tororo town. The first boda-boda association, Busia Bicycle Operators Association (BBOA), was formed in Busia in 1986. It has currently around 400 members. The chairman of the organization estimated that the number of riders had more than doubled over the last five years. There are two more associations in Busia - Namgodi and Masafi. Together, they account for about 100 members.

The boda-boda service was introduced to Tororo town in the mid-1980s. Two associations were formed in 1987 - the Tororo Transport Cycle Cooperative Society (TRR) in January, and the Mukwano Disco Bicycle Transporters (MDBT) in July. TRR and MDBT have also established branches in smaller urban areas and trading centers outside of Tororo town. There are 1,000 to 1,200 riders in town. MDBT, which is the largest association, has 850 registered bicycles, among which 600 were estimated to be full time riders. In Tororo district, the riders come from all the various ethnic groups in the district.

The distance that the boda-boda riders cover varies greatly with the area. In Tororo district, which is relatively flat, riders in town go out about 30 km while riders in Busia reported doing shorter, more frequent trips. The average trip by Tororo town riders was estimated at 13 km, twice a day. In Busia, the riders' average trip was about 6 km, 3 to 4 times per day.

In general, the charge depends on the condition of the road, the terrain, what is being transported, whether the customer is a regular, and the general assessment of the "paying ability" of the customer. Prices also vary throughout the day. In Tororo town, very few destinations have a fixed price. The charge for a distance of 20 km can vary from Ush.600-1,500, that is between Ush.30 and Ush.75 per km. A shorter 2 km trip within town costs Ush.150 while the minimum charge is Ush.100 for 1 km. Thus, the kilometer charge tends to be lower the longer the distance travelled.

The cost of joining an association in Tororo town varies between Ush.1,000-1,500 depending on the club. A fee of Ush.1,200 is applied towards the metal plate with the registration number, and Ush.1,900 towards the club shirt. The responsibilities of the associations vary. In Tororo, they work as a kind of bank both for those who ride their own bicycles and for those who hire them. All members deposit between Ush.400-800 per day into their "account" with the association. At the end of the month, the association releases these funds less Ush.1,000 which is used for administrative expenses.

Table 2.8 gives a breakdown of the operating characteristics and vehicle-operating costs for boda-boda operators in Tororo town. Boda-boda operators who ride their own bicycles earn an average annual income of Ush.335,600 after operating costs, equivalent to Ush.27,960 per month.

In the case of a rented bicycle, the owners receive between Ush.500-700 per day depending on the agreement with the driver. The rest of the income is kept by the driver. In some cases, riders earn a minimum salary of around Ush.4,000 monthly in addition to the right to keep the excess money above the rental fee. The rider generally covers the running and maintenance costs while the owner is responsible for major repairs and the tires.

Table 2.8: Operating Characteristics and Vehicle Operating Costs: Boda-boda Transport Operators in Tororo Town

	Average	Range
Operating Characteristics		
Working days per week	6	5-7
Trips per week	12	10-25
Distance per one-way trip (km)	13	1-30
Distance per year (km)	16,224	
Load per trip (kg)	70	15-100
Load per year (tonne)	43.7	
Vehicle Operating Cost (Ush.)		
1. Investment:		
Total Cost	68,750	65,000-72,000
Life (years)	4	3-5
Annual Depreciation	17,188	13,000-24,000
2. Operating (per annum)		
General Maintenance	52,000	39,000-65,000
Tires and Tubes	50,400	
Monthly Fee to Assoc.	14,400	12,000-18,000
TOTAL	118,000	
Annual Gross Revenue (Ush.)	468,000	343,200-780,000
Annual Income - after costs and depreciation (Ush.)	335,600	241,800-646,600
Income to rider in case of a rented bicycle:		
2. **Vehicle Operating Cost** (per annum)		
General Maintenance	52,000	39,000-65,000
Rent to Owner	156,000	124,800-249,600
TOTAL	208,000	256,800-324,600
Annual Gross Revenue (Ush.)	468,000	343,200-780,000
Annual Income - after costs (Ush.)	260,000	86,400-455,400

In Tororo town, riders apparently do not have to pay municipality taxes, while in Busia and Mbale town, they pay Ush.50 and Ush.100 respectively daily. These taxes are collected directly from the riders by the police.

Boda-Boda in Mbale

In Mbale town, there are 5 boda-boda associations, all rather smaller than Tororo, the "Gava Mkulia" Mbale United Transporters (MUT), the Bugisu Cyclist Union (BCU), the Doko Youth Association (DYA), and the Bugisu Youth Association (BYA). Gava Mkulia was the first one to be established in 1989. In 1991 it was also the first, and, as of September 1991, the only, association registered as a corporation.

The estimated numbers of active boda-boda riders in Mbale vary greatly and there are discrepancies between these estimates and the number of licensed bicycles. It is likely that there are around 2,000 riders in the area. This is less than the 3,000 riders that were said to exist before compulsory registration was enforced.

Compulsory registration was introduced to overcome the concern of the police authorities about the many bicycle accidents, and the potential criminality that could follow from having a pool of young underemployed men with insufficient earnings around the town. In Mbale, which is predominantly Bagisu, a large percentage of the riders are Iteso who have come south due to the insecurity in their home area.

In Mbale, town riders cover a radius of about 6 km; they rarely travel any further. The riders cite security reasons for limiting themselves to this radius, claiming that at least one rider per day gets his bicycle stolen by a passenger. A 5 km trip can cost between Ush.200-300, that is Ush.40-60 per km. Most of the trips are, however, shorter and within the town area, riders performing 15 to 25 trips per day.

In Mbale district, the boda-boda associations charge their members Ush.600 per month, but they do not perform any "banking service". The association can collect the daily rental fee on behalf of the bicycle owners, but in most cases the riders deliver the money themselves directly to the owners.

Boda-boda riders who ride their own bicycles in Mbale town earn on average Ush.327,000 per annum, the equivalent of Ush.27,250 monthly. In the case of a hired bicycle, the income to the rider drops to around Ush.228,800 per annum, the equivalent of Ush.19,066 monthly (see Table 2.9).

Nakaloke village, 8 km north of Mbale on the road to Soroti, is a small trading center with a boda-boda stand. There are about 350 riders and they are organized in the Nakaloke Cyclist Union. The terrain is relatively flat and the riders mainly service the rural areas. The average trip was estimated to be 20 km, but on occasion the riders claim to have made trips of up to 45 km into the rural areas.

A trip to Mbale town would cost Ush.200, Ush.25 per km, but the riders said that they hardly ever go there because travellers to Mbale have access to motorized transport. In Nakaloke, the boda-bodas mainly service areas which are off the main road. Here the kilometer price seemed to be rather constant, around Ush.25, regardless of the trip distance.

Summary

Boda-boda operators who ride their own bicycles earn an average monthly income of Ush.27,500. Thus, in only three months, a rider will be able to recover the expense of purchasing a bicycle. However, only about 25-30 percent of all riders in both Mbale and Tororo districts own their bicycles. At the time of this team's visit, bicycles were easily available in the town shops in both districts. The lack of bicycles for sale does not appear to be the reason that keeps riders from buying their own bicycles.

A more plausible explanation relates to the difficulties that riders face in raising the money for the initial investment. The cost of living in Uganda is increasing rapidly due to an annual level of inflation of 40-50 percent. The purchasing power of the riders is in constant decline, as their incomes fail to increase at the same rate as inflation. Their earnings are therefore increasingly spent on daily necessities, and their ability to save is very low. Also, the real value of savings which are not kept in a bank account is rapidly depreciating. The availability of credit for bicycle purchases would thus greatly increase the potential for bicycle ownership.

A rider who rents a bicycle earns on average Ush.19,500 per month. The bicycle owner makes between Ush.5,800 and 12,800 monthly, after allowing for tire expenditures and the boda-boda association fee. Thus, the owner can expect to recover the purchase price of the bicycle within five to eleven months. Most owners have one or two bicycles, but there are some who have up to 25 bicycles rented out.