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## **SOCIAL BENEFITS OF RURAL TRANSPORT: A MIXED RESPONSE FROM A ROAD IMPROVEMENT PROJECT IN THE THUCHI-NKUBU AREA OF KENYA**

**A. Airey and M. A. Cundill (1998)**

### **Objectives of the case study**

The study of household travel in the Meru District of Kenya (Airey and Cundill, 1998), presents not only a picture of how transport is used in a rural community, but how the nature of travel has been affected by the development of a new road in the locality. In practice, the impacts have been somewhat mixed. For example, the relative and absolute importance of agricultural incomes were influenced by widely different commodity production and sales experiences quite unrelated to the effect of the new road. On the other hand, earnings from non-agricultural activities have been influenced by both the drought in 1986 as well as the improvement in road accessibility.

### **1. BACKGROUND**

In May 1985, a new bitumenised road was opened to traffic between Thuchi village and Nkubu town in the Meru District of Kenya. Built under British aid, the road runs for 54km along the eastern slopes of Mount Kenya. It replaced an 84km winding earth road and completed an all-weather road link (the B6) between the district capitals of Embu and Meru. As well as providing an important route for through traffic, the new road has given improved access to a fertile coffee and tea-growing area.

The objective of the study was to examine rural travel behaviour and to determine how it was affected by the new road. The main source of data used in this report is drawn from a series of household surveys. The first survey of three hundred households was carried in 1983, two years before the road was opened. This survey was subsequently repeated in 1986 and in 1989 after the road had been opened. In addition to the household surveys other data was collected from traffic surveys and from surveys of transport services.

### **2. RESULTS OF HOUSEHOLD SURVEYS**

From the baseline survey in 1983, the household travel rate rose from an average of 5.0 to an average of 11.2 journeys per household per month in 1986, a 125% increase. Between 1986 and 1989 the travel rate was reported to have declined to an average of 8.4 journeys per household per month, a 25% decrease since 1986, but still a 68% increase since the pre-road improvement baseline of 1983. This decline in travel can be explained by the rise in transport fares between 1986 and 1989 as fierce competition between services subsided, resulting in a more realistic pricing policy, as well as unseasonably late rains which impacted heavily on travel costs and journey rates.

## 2.1 Transport Modes

Most journeys began and ended at the residence of the household and were composed of a number of trips, each covering one "leg" of the journey. Table 1 identifies the modal changes that have occurred since 1983.

While the matatu<sup>1</sup> can be seen to dominate the trips undertaken by the sample population over the six years, there is a suggestion that it lost some ground and that modal choice became more varied in 1986 and 1989 than in 1983.

The new Thuchi-Nkubu road appears to have widened modal choice, particularly for households living close to the new alignment. This is particularly the case for bus, bicycle and walk journeys, which seemed to be the most sensitive to roadside location. There is strong evidence to suggest that these roadside households have a preference for bus services because of their cheaper fares. Similarly, they are more prepared to walk to the new road in order to gain access to the cheaper bus services. Matatu users suggest that quickness of service is its main virtue, whereas bus users choose this service because of its greater comfort and low cost.

In spite of widespread ownership, bicycles were used very little in 1983. In 1986 and 1989, bicycle travel had increased to become a significant transport mode. The majority of these bicycle journeys began and ended in villages next to the new road. It seems likely that the new road surface has encouraged households in these communities to increase the use and ownership of bicycles for longer distance travel.

**Table 1. Number of Trips by Transport Mode**

Transport Mode	Number of Journeys (and %)		
	1983	1986	1989
<b>Matatu</b>	3175 (85%)	6126 (74%)	4192 (76%)
<b>Bus</b>	111 (3%)	582 (7%)	216 (4%)
<b>Private Car</b>	162 (4%)	556 (7%)	306 (6%)
<b>Bicycle</b>	23 (<1%)	159 (2%)	158 (3%)
<b>Motorcycle</b>	0	56 (<1%)	108 (2%)
<b>Other Vehicle</b>	36 (1%)	156 (2%)	21 (<1%)
<b>Walk</b>	243 (6%)	638 (8%)	531 (10%)
<b>TOTAL</b>	<b>3750</b>	<b>8273</b>	<b>5532</b>

## 2.2 Journey Purpose

Much greater differences in the distribution of journey purposes are recorded between 1983 and 1986 than between 1986 and 1989. The most volatile categories in this changing pattern are journeys for work, school and personal business. Over this survey period, journeys for work, in particular, have shown a steady growth from 20%

<sup>1</sup> A matatu is a privately owned indigenous minibus with a carrying capacity of 8-25 passengers

to 33% of all journeys. School journeys have shown fluctuations with no consistent trend, while personal business journeys have shown a steady decline. In contrast, the remaining journey purposes retain a more or less consistent share of the total pattern.

**Table 2. Breakdown of Journeys by Purpose and Gender**

Journey Purpose	Number of journeys (Percent of total)			Percent of journeys in each category by females		
	1983	1986	1989	1983	1986	1989
<b>Work</b>	304 (20%)	964 (30%)	787 (33%)	23	30	23
<b>Shopping</b>	272 (18%)	543 (17%)	401 (17%)	43	33	39
<b>Social</b>	326 (21%)	560 (17%)	419 (18%)	48	35	34
<b>Health</b>	192 (13%)	450 (14%)	314 (13%)	64	63	60
<b>School</b>	27 (2%)	183 (6%)	67 (3%)	48	58	27
<b>Trading</b>	112 (8%)	176 (5%)	114 (5%)	80	51	77
<b>Personal Business</b>	191 (13%)	260 (8%)	138 (6%)	16	13	21
<b>Bank</b>	70 (5%)	124 (4%)	132 (6%)	14	21	23
<b>Total</b>	<b>1494</b>	<b>3260</b>	<b>2372</b>	<b>41</b>	<b>37</b>	<b>35</b>

### 2.2.1 Work journeys

Work journeys include journeys made to undertake both paid and self-employment and for working on the household farm. Journeys for work have continued to increase in relative terms and comprised nearly a third of all journeys in 1989. However there has been an absolute decline from the peak of 964 journeys in 1986 to 787 in 1989. Despite this there has been a general rise in the number of people recording journeys to work. In 1983, 47 people recorded work journeys, (2.5% of the sample population). By 1986 this had increased to 78 (3.9%), and then to 137 (6.5%) in 1989. This widening of the journey to work pattern reflects, in part, the continued increase of household members who are in non-agricultural employment.

### 2.2.2 Shopping journeys

The 1983 classification distinguished shopping journeys as travel to purchase consumer goods. The majority of these shopping journeys were to Meru, and to a lesser extent Nkubu, to purchase higher order goods rather than daily necessities. This level of demand seems to be relatively stable since it generates a similar proportion of the total journeys in all three years.

### 2.2.3 Social journeys

Social journeys have marginally declined in importance since 1983 when they constituted 21% of all journeys. This relative decline was greatest in 1986 when the proportion of social journeys fell to 17%, but recovered to 18% of all journeys in 1989. Visiting relatives and friends have continued to be the most important components of social travel.

### **2.2.4 Health journeys**

Visits to hospitals and dispensaries have likewise retained their relative importance, accounting for a more or less consistent share of all journeys in all three survey years. The increased importance of Chogoria hospital as a treatment destination to the sample population is apparent, underlining the importance of the Thuchi-Nkubu road to this church hospital. In 1989, it attracted 63 journeys (20% of all health journeys). This compares with 78 journeys in 1986 and only four in 1983, 17% and 2% of health journeys respectively. These journeys were generated by households in the roadside communities of Kanyakine, Igoji and Kathigu who were assisted by a decrease in the cost of travel to Chogoria.

### **2.2.5 School journeys**

School journeys by vehicle show no consistent trend over the study period. Travel by vehicle to a primary school in 1989 accounted for only 10 (15%) of these school journeys, compared with 50 (28%) in 1986.

The majority of school trips were concerned with secondary education, which usually involved boarding at the school and therefore living away from home. Most parents enrolled their children in local district schools. Because the timing of the travel surveys coincided with the publication of the secondary entrance examination results, parents in all three surveys, often accompanied by their children, spent several days travelling to a secondary school in Meru District arranging for their child to be enrolled.

### **2.2.6 Trading journeys**

The 1983 definition of trading journeys focused on travel to sell and buy agricultural commodities and foodstuffs. The majority of these journeys are made by women to nearby licensed markets for the sale of surplus produce from their maize shamba or vegetable garden. The analysis suggests that the absolute number of such journeys has remained stable and as a result their relative importance has shrunk.

### **2.2.7 Personal business journeys**

Travel for administration and agricultural reasons, has consistently declined in importance since 1983. This probably represents a decline in, for example, the bureaucratic need to register personal identity. There seem to be also less involvement with the District and Provincial Administrations by the sample population.

Similarly, journeys for agricultural reasons represent a relatively minor reason for travel and have declined slightly since 1983 and 1986. In 1989, problems with land registration and tea payments seem to have generated the highest number of journeys in this category.

### **2.2.8 Bank journeys**

Journeys to the bank are self explanatory and involve salaried workers and household heads depositing or cashing Co-operative Society or Crop Parastatal payments. These journeys have consistently increased over the study period, indicating greater involvement by the study population in the formal economy.

### 2.3 Gender Differences in Journey Purpose

Table 2 indicates that males consistently dominate five of the eight journey purpose categories, namely work, shopping, social, personal business, and banking. This pattern reflects the underlying social and economic dominance of men in Meru society. Females consistently dominate only health journeys. This again reflects the norms of Meru society, in which women are the producers of food for, and carers of, the family. Child health-care is therefore a female responsibility. At the same time, the high birth rate means a frequent female need to visit maternity units in local hospitals or health centres.

Trading journeys which lost their female dominance in 1986 by 1989, once again emerged as a female dominated category. Women are buyers and sellers of foodstuffs, usually in the local markets, whereas men are more involved with buying and selling of non-food products and consumables, usually from kiosks, stalls and shops found throughout the area. It would appear that the latter type of trading has decreased in importance since 1986, allowing female organised trading to dominate again.

### 2.4 Main Origin and Destinations

A strong urban bias was found to most journey purposes with the exception of work and school journeys. This bias was particularly pronounced in travel for health, shopping, trading, business and banking. Because of its key position within the District, Meru was the natural focus for many of these journeys: 48% of all journeys were to Meru. Nkubu, with 41% of all journeys is also a major focus because of its geographical proximity to the study villages.

In 1983, 64% of work journeys and 65% of school journeys were to rural destinations. High rural population densities and a dynamic rural economy are part of the reason for the strong rural direction of work journeys, while the rural location of primary and several secondary schools helps to explain the importance of rural school travel.

### 2.5 Household Income and Journey Frequency

As expected, average journeys per month tend to rise with increasing income for each survey. Given this pattern, it is noticeable that in 1986 there was a marked increase (+125%) in the number of journeys made by all income classes. In general this increase was lowest in the low-income groups and greatest in the higher income classes. This greater propensity to travel can be seen as largely a result of the effect the new road has had in reducing the cost of travel. By 1989, this effect had failed to sustain itself, particularly for the low-income groups. Their journey making returned to levels similar to those of 1983 before the road was improved. Only the high-income groups had managed to maintain high levels of journey-making similar to those that prevailed in 1986.

**Source: Airey A and M A Cundill. (1998) A study of household travel in the Meru District of Kenya. TRL Report 353. Crowthorne: Transport Research Laboratory**