

**Travel choices and patterns of bicycles users, based on data from South Africa's
First National Household Travel Survey (NHTS) 2003**

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Abstract:

Travel choices and patterns of bicycles users, based on data from South Africa's First National Household Travel Survey (NHTS) 2003

This paper will give strategic insight into the transport problems and travel patterns of the bicycle users of the Republic of South Africa. The data is extrapolated from the NHTS, a survey commissioned by the Department of Transport (DOT) and executed by Statistics South Africa (Stats SA). The NHTS was based on a representative sample of approximately 50 000 households.

The objectives of the survey in terms of bicycles are described in detail and an indication is provided as to how the results will be used by national and provincial government for policy monitoring and in reviewing the implementation of national transport policy. The following will also be demonstrated:

- Gaps between international and RSA performance indicators as well as provincial and regional differences in the performance of bicycle transport;
- Customer satisfaction and concerns about transport;

Key issues such as the use of bicycles for worker travel, learner travel and relationship to public and private transport will be reported on.

A description of the sample and the spatial extent of the survey are provided in the paper. Examples of the use of National Household Travel Survey information are included in both the paper and the presentation.

1. INTRODUCTION

A national household travel survey (NHTS) was considered for South Africa as long ago as 1986, when the Department of Transport was experiencing difficulties in obtaining information to assist them in fulfilling their research, planning and information needs. The government has in general been inundated with anecdotal information which has not been based on researched evidence, and in most cases has been based on perceptions and secondary data. This is especially worse in the case of non-motorised research. Almost no data existed until the completion of the NHTS in 2003.

The NHTS is a scientific study based on a representative sample of 50 000 households throughout South Africa. The reason why such a large sample was used was to cater for the great diversity of the population and the wide variety of geographic circumstances.

It became clear from the survey that it will assist government to address the following issues:

- Evaluation and more effective targeting of public transport subsidies
- Accessibility of transport to work, educational, medical and welfare services
- Affordability of transport
- Safety and security
- To understand travel choices of different households
- Effective targeting of infrastructure investment

The survey contains a wealth of information on walking and cycle trips for all trip purposes, ownership of vehicles per household, the use of cycles in the week prior to survey day, use of non-motorised modes by age, settlement type, attitudinal information and much more.

The purpose of this paper is not to cover the results extensively, but rather to highlight key issues that will reform the way our policies are made and to enforce changes on the social planning and investment front.

2. INTERESTING KEY RESULTS

Ownership of vehicles

The vehicles include bicycles, motorcycles, company cars, cars and other vehicles. Perusal of the Table 1 indicates that motorcycle, company car, combi and truck ownership is negligible. The two forms of vehicle ownership which reflect some interesting patterns are bicycles and motor cars. Ownership of bicycles ranges from as high as 0.39 bicycles per household in the Northern Cape (0.35 in the Western Cape) down to 0.1 vehicles per household in the Eastern Cape.

Table 1: Average Number of Vehicles per Household

Province	Bicycles	Motor-cycles	Company cars	Cars	Combis	Trucks	Other
Western Cape	0.35	0.02	0.07	0.60	0.02	0.01	0.00
Eastern Cape	0.10	0.01	0.04	0.18	0.01	0.01	0.00
Northern Cape	0.39	0.02	0.07	0.32	0.01	0.01	0.03
Free State	0.25	0.02	0.03	0.28	0.02	0.01	0.00
KwaZulu-Natal	0.14	0.01	0.05	0.28	0.01	0.01	0.00
North West	0.18	0.01	0.06	0.26	0.01	0.01	0.01
Gauteng	0.21	0.02	0.08	0.46	0.02	0.01	0.00
Mpumalanga	0.20	0.01	0.07	0.29	0.02	0.01	0.00
Limpopo	0.16	0.01	0.02	0.20	0.01	0.01	0.00
RSA	0.19	0.02	0.06	0.33	0.02	0.01	0.00

Household car ownership is highest in the Western Cape at 0.6 cars per household, followed by Gauteng at 0.46 cars per household. Lowest levels of car ownership occur in the Eastern Cape (0.18 cars per household) and Limpopo Province (0.20 cars per household).

There is a significant difference in the ownership of cars between metropolitan and rural settlement types as indicated in the ownership rates listed below:

car ownership in metropolitan settlements	-	0.48
car ownership in urban settlements	-	0.39
car ownership in rural settlements	-	0.14

Bicycle ownership is highest in metropolitan and urban areas (over 0.26 bicycles per household) and lowest in rural areas (0.14). Both bicycle and car ownership are strongly correlated with monthly household income as indicated in **Figure 1**.

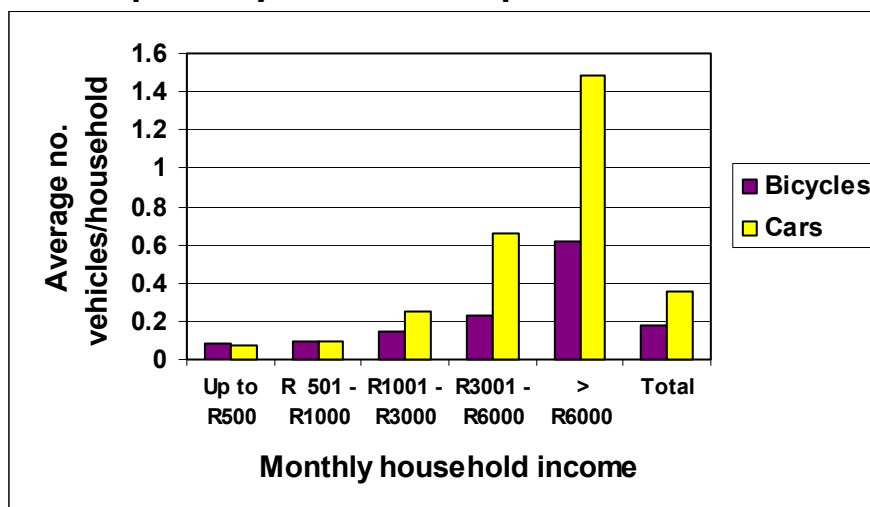
Figure 1: Ownership of Bicycles and Cars per Household

Table 2: Use of Transport Modes by Income Group in the Week (7 Days) Prior to Survey Day

Monthly household income	Percentage of all people		
	Public Transport	Car	Cycle
Up to R500	27.2	2.3	0.8
R501 - R1000	29.2	3.3	0.7
R1001 - R3000	38.6	8	0.8
R3000 - R6000	42.6	25.6	1.1
> R6000	25.6	60.2	2.1

As would be expected, car usage was relatively insignificant by household members living in households with an income of R3 000 per month or less. In households earning between R3 001 and R6 000 per month, 26 per cent, and in households earning more than R6 000 per month, 60 per cent of all household members made use of a car at least once during the week prior to the survey.

Public transport use was most common amongst those earning R3 000 or less. The use of bicycles increased slightly in households who earn R3 000 and above.

Table 3: Use of Transport Modes by Age Group in the Week (7 Days) Prior to Survey Day

Age	Percentage of all people		
	Public Transport	Car	Cycle
0 - 6	9.5	8.9	0.5
7 - 14	13.1	8.6	1.4
15 - 19	26.9	9	1.4
20 - 25	45	12	0.8
26 - 40	50.5	21	0.8
41 - 65	42.4	24	0.8
> 65	24.2	19.9	0.5

In all cases, the working age population made the greatest use of all travel modes with the peak being in the 26 to 40 year age group where 35 per cent of all persons made use of public transport and 21 per cent made use of a motor car at least once during the seven days prior to the survey. The use of bicycles was lowest amongst those persons of 14 years or less.

This is because most people in this age group could walk to school or to visit their friends. However the age groups 7-19 made relatively used of bicycles more compared to any other age groups.

Travel to education centers

In the RSA as a whole, the main reasons for undertaking weekday trips were to attend educational institutions, to go shopping, to visit friends and relatives, or to go to work. The importance of trips to educational institutions is apparent, particularly in the rural areas, where education is the main trip purpose. This is also the case in urban areas. Only in metropolitan areas did trips to work predominate.

Table 4: Main Trip Purposes on Weekdays, by Settlement Type

Settlement type	% of household members naming trip purpose			
	Education	Shopping	Visiting	Work
Metropolitan	32.8	35.8	28.3	36.6
Urban	37.1	31.5	31.0	31.0

Rural	51.0	23.4	27.0	15.9
RSA	40.9	29.9	28.6	27.2

Taking cognizance of this it is interesting to note the travel habits to education centers below:

The vast majority of scholars and students walk to their educational destinations (76%). Unfortunately, almost 3 million of those learners spend more than one hour a day walking to and from the education centres. The use of motorised travel is low, with taxi and car each accounting for around 9 per cent of all trips to education.

There is a large difference between the modes used in metropolitan, urban and rural areas, although walking and cycling are the main modes of travel in all areas. In metropolitan areas about a quarter of learners use public transport, about 19 percent use cars or are driven by their parents. In rural areas, 91 percent of learners walk to education centres.

Table 5 shows the breakdown of the mode used for education trips by the income of the household. It is quite clear from the table that use of motorised transport for education trips is mostly confined to higher income groups.

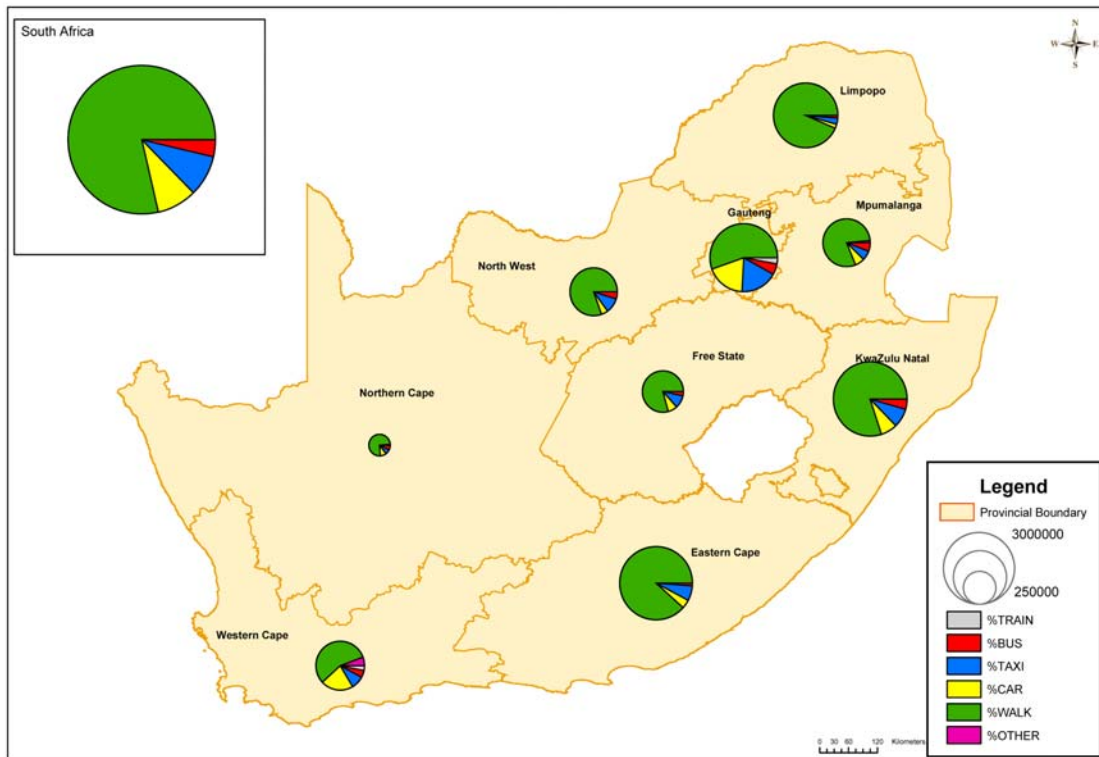
Table 5: Mode to Education Centre by Income of Household

Mode to education - all learners, including pre-school and post-matric							
Monthly household income	Percentage of learners						Number of Learners (millions)
	Walk/cycle	Taxi	Car	Bus	Train	Other	
Up to - R 500	92.5	3.1	1.0	1.8	0.3	1.3	3.5
R501 - R1000	89.3	5.6	1.0	2.3	0.4	1.4	4.0
R1001 - R3000	79.1	9.8	3.1	4.4	1.4	2.2	4.5
R3000 - R6000	56.8	19.6	13.3	6.5	1.7	2.1	1.6
> R6000	27.4	18.5	43.3	6.8	1.3	2.7	1.4

Taxi usage for education trips is far higher amongst those households earning more than R3 000 per month and car usage for households earning more than R6 000 per month. At the other end of the scale, over 90 per cent of the lower income households send their learners to school on foot.

Figure 2 depicts both the quantity of trips made to education institutions, and the travel modes used in each of the provinces. It is apparent from the map that the use of travel modes is strongly related to the level of urbanisation. In Gauteng and the Western Cape, the use of taxis and cars for travel to work is far higher than all the other provinces. Walking to education centres is predominant in the more rural provinces such as Limpopo, North West and KwaZulu Natal.

Figure 2: Modes Used for Education Trips in the Provinces



3. CONCLUSION

To address some of the short falls as shown above the Department of Transport initiated a rural strategy. However users are encouraged to engage with this information and assist national and local government with policy and other programs in non-motorised areas; Policy targets, for example modal shares for work and education trips, may be benchmarked.

Gaps between international and RSA performance indicators can be identified as well as provincial and regional differences in the performance of no-motorised systems; Customer satisfaction and concerns about the use of bicycles can be monitored, particularly relating to issues such as safety;

REFERENCES

Department of Transport. 2005. *National Household Travel Survey 2003 Technical Report*. Pretoria.

Department of Transport. 2005. *National Household Travel Survey 2003 Key Results Report*. Pretoria