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BORDER COMMUTING AND PIRATE TRANSPORTATION IN SOUTHERN AFRICA

Various para-transit modes such as mini-vans, mini-buses, taxis, and others are extensively operating in developing countries. In many cases they operate in competition with the common stage bus services either as organized controlled systems or as a mixture of both organized and uncontrolled pirate operations. Their share in the transit market, although varies geographically, is mainly significant in urban areas. In Malaysia, for example, over 30 percent of the daily urban trips were made in 1978 by the public minibus system (Mackay & Partners, 1981). In Indonesia the average usage of the local mini-van system is 24 percent (Leinbach, 1981). Similar figures are found in several countries in southern Africa where illegal para-transit operations transported in 1981 almost 30 percent of the total daily commuters (Berard, 1982).

The para-transit systems are usually "free enterprise" transport operations able to choose the most profitable corridors. Obviously such corridors become susceptible to competition and especially with the spread of pirates in the business. Due to the lack of information and reliable data very little work was done on illegal transit operators. There is however evidence that they play a larger role in commuter movements than in complementing non-work travel needs (Stern, 1981).

This study is aimed to contribute to our knowledge on pirate transport in a third world context. Specifically it examines its role, both geographically and service wise, in border commuting movements between the black national states of southern Africa and the labor markets in the white area of South Africa.

BORDER COMMUTING IN SOUTH AFRICA

The border commuting phenomenon came into being in southern Africa during the sixties when an active start was made with economic development.

resettlement program and the establishment of townships in the newly established black homelands (Benbo, 1976). The black homelands are new countries which have been converted territorially but the government of the Republic of South Africa from a series of disparate native reserves and locations to national states (Christopher, 1982). Presently there are ten homelands of which six are categorized politically as "self governing national states" and four as "independent states" (Figure 1). The creation of the homelands involved an establishment of townships and other settlements in the homelands which caused a sharp increase in commuter traffic. Blacks relocated in homeland townships have become commuters, travelling daily to work within the industrial area of South Africa. A further urban relocation act and redrawing of homeland boundaries in the seventies increased the proportion of blacks living in the homelands by 66 percent between 1970 and 1980 (Giliomee, 1983). Consequently, border commuting has also increased, in some cases by hundreds percent as outlined in the following Table 1.

Effective commuter traffic requires a cheap, fast and comfortable transport system. These demands could not be met in southern Africa both because of the rapid increase in border commuting and the long distances involved. Government planners, for example, have been working on the estimate that daily travel to work is within a distance of 113 kilometers. Daily commuting patterns of nonwhite workers does not play therefore any part in determining commuting fields in South Africa (Fair, 1975).

The major part of commuters (54.3 percent) are heading only to nine urban centers with Bophuthatswana and Kwazulu being the dominant origins, as shown in Figure 2. The rest are distributed among manys small job markets across the homelands boundaries. Crossing the border fot the commuter of the independent states involves a transfer at the border since the homelands' public transportation is not allowed to operate in South Africa. Border commuters from the indipendent homelands have thus four transport options as diagrammatically shown in Figure 3. Internal transportation in the homelands provides feeding services to the border transfer stations from which commuters can either proceed by South African buses or, wherever available, by train. In 1981 71.4 percent of the total 739,700 commuters used the bus and 13.5 percent used the train (Mastouroudes, 1982). These figures include also commuters who arrived to the transfer station either by private transport or by para-transit services. The remaining 15.1 percent (92,300 commuters) of the total commuters arrived by private transport or by para-transit services directly to their work place without transferring. Since private car ownership in the homelands is still very low (Benbo, 1976), most of the latters arrived by para-transit

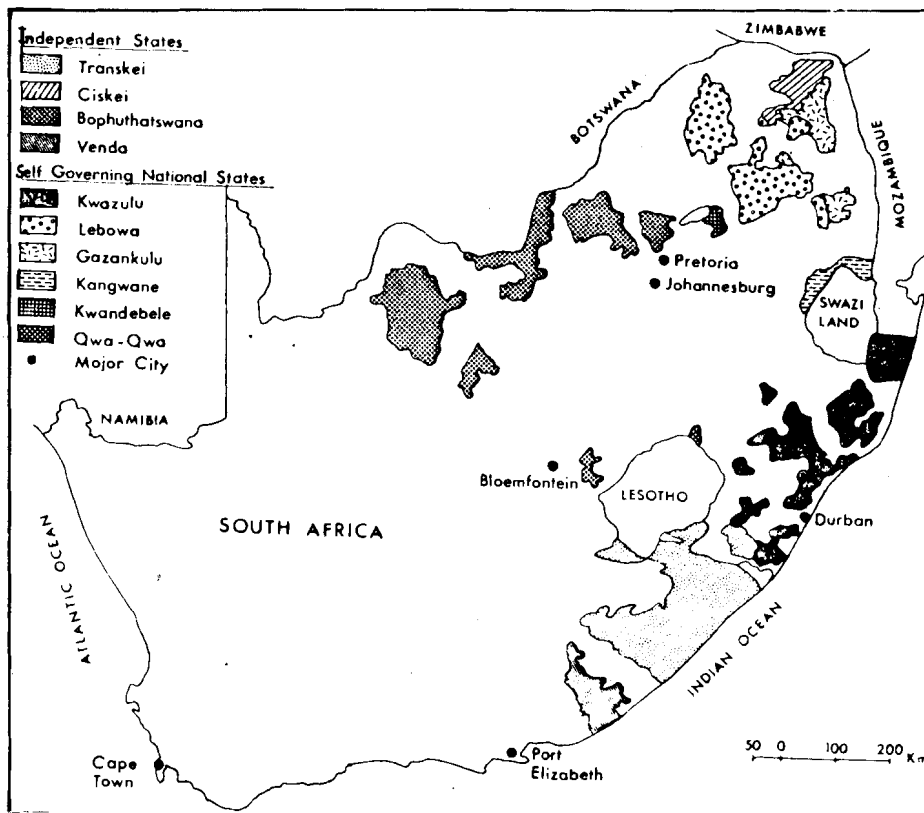


Figure 1: The Homelands of Southern Africa

TABLE 1. INCREASE IN THE NUMBER OF BORDER COMPUTERS PER HOMELAND IN SOUTHERN AFRICA

Homeland	1976	1977	1978	1979	1980	1981
Transkei	7.100	7.100	7.600	8.900	9.000	9.100
Bophuthatswana	136.400	148.200	151.800	155.400	161.200	162.200
Venda	3.700	4.500	5.100	5.600	5.600	5.700
Ciskei	34.200	34.600	36.200	37.100	38.100	38.400
Kwazulu	279.200	291.300	321.700	352.300	363.900	384.200
Owagwa	1.800	2.100	2.000	2.500	6.800	9.500
Lebowa	44.400	46.600	54.400	57.900	65.800	72.200
Gazankulu	6.300	6.300	6.700	7.800	8.800	9.700
Kangwane	23.000	25.200	28.500	33.100	35.600	40.000
Kwandebele	—	1.100	1.300	3.500	5.900	8.700
Total	536.100	567.000	615.300	664.100	700.700	739.700

Source: Mastouroudes, 1982.

services, these include legally South African registered taxi operators and illegal mini-van and mini-buses services. Authorities are unable to control the spread of the illegal, pirate operators which offer a public service that bus operators are unable or unwilling to provide. Precise data is not available but it is estimated that over 40,000 illegal drivers are presently offering their services (Financial Mail, SA, April 22, 1983) for both intra urban and inter state trips. Some of the characteristics of this private enterprise and the reasons for its spread are discussed below.

PIRATE TRANSPORTATION

Pirate transportation in Southern Africa is mainly based on a eight to nine legal seating, passenger vehicle. Other vehicles include converted trucks (buk-kies) and panel vans. The following are the major characteristics and procedures in their method of operation.

Major Characteristics

Illegal services operate without a Local Transportation Board permit to convey passengers and therefore they do not meet any required standards conditioned in such permits. Further, services are not provided from a certified taxi rank but rather are offered as roaming taxis collecting fares at various points, mainly on well patronized bus routes or opposite to or near major bus stations or starting terminals. Due to complete lack of control they are very often preventing the bus from even getting into its loading bay. An aggressive competition between pirates and bus operators is frequently found where stone throwing of buses is arranged by pirates in order to have buses withdrawn from certain routes (Tollgate, SA, 11-2, 1983). In such cases or in cases where bus services have been discontinued as a result of the undercutting in fares by pirates, the latters will then charge an individual fare far in excess of the normal bus fare. At the same time the vehicles are not insured under the correct third party insurance to convey passengers and are thus bringing about a situation that the third party insurance that they do carry is null and void. The seious consequences of this situation for both passengers and third parties injured needs no furhter explanation.

Another safety problem associated with the pirate operation is the lack of periodic vehicle examination as required by the local law. However, due to the very lucrative business being done, vehicles now are relatively new but still without the required permit. Drivers also do not carry log books as requires as well as do not have meters on their vehicles. Therefore it is highly unlikely that illegal operators keep any record of income and expenditure and as such they

most likely also defraud the state of revenue through the non-payment of taxes. Violation wise pirate have also been found switching licence plates from vehicle to vehicle or oftenly transferring operation permits from certified to non-certified vehicles. For obvionus reasons very few pirate vehicles observe the manufacturers maximum load in regard to the number of people the vehicle may safely carry. Overloading is so bad that in some areas vehicles have been found with no seats, other than the drivers', in order to carry heavy loads of passengers, sometimes well in excess of 20 in a vehicle designed for eight passengers (1).

The uncontrolled procedure of operation offers several advantages to the captive passengers. Pirates can deviate from the bus route as well as stop anywhere. These imply in many cases a door-to-door service. In addition, very often pirate operators permit regular passengers to travel on credit and pay at the end of the week. Failure to pay naturally lead to retaliation by the pirate friver.

In order to increase their profit and expand their services several other illegal acts are practiced by pirates. There is some evidence that pirate operators are protected by protection rackets to keep certain new-comers out of the field or to allow the existing ones to continue to operate as long as protection money is paid. To expand their services pirate are displaying at night illuminated "Taxi" signs, mainly in the urban areas, which mislead the public into using them as a legal service. A more aggressive method of expanding the business is practiced en bus routes. Pirates are driving en route immediately in front of the bus, slowing it down whilst a second pirate clears the road ahead of passengers. Due to the complete lack of any or consistant prosecution, pirate services expanded all over the South African major cities, especially during off-peak hours, thus providing border commuting services between 5a.m. to 9a.m. and 4p.m. to 6p.m. and other intra urban service during the rest of the time.

The expansion of pirate services into the urban areas proved to be so financially rewarding that pirates could afford to hire vehicles on a long basis term. This is also so lucrative to the car hire firms that they have ignored complaints in this regard from bus operators. Pirates also found industrial contracts as a new avenue for expansion. Some pirates make contracts to transport employees, a practice which has led to the cancellation of numerous bus company conveyance contracts and also to the complete elimination of late night buses to transport night shift workers as well as hotel and restaurant staff

(1) Based on observation made by the City Tramways Company of the Greater Cape Town area.

to their homes. A byproduct of the employer that conveys his own employees is that the vehicle, used by the one staff member driver of the employer, is taken into the residential area at night on the employee's homeward trip and the next morning, prior to the conveyance of the employees to work, it is used as a private taxi within the township for a number of trips without the knowledge or consent of the employer. This practice once again proves how financially rewarding the pirate services can be. Some of the reasons for their growth must be pointed out at this stage.

Reasons for Growth

The first customers for illegal transit services in Southern Africa were border commuters who had a relatively limited number of transport means to travel from their new homelands to their places of work. As authorities encouraged the movement of blacks to the new homelands less control was put on the links connecting them with the labor markets within South Africa. Pirates found this situation very convenient to start their small, "tax-free", business. A "legal stimulator" was introduced in 1977, namely the Section Provision of the Road Transportation Act (No. 74 of 1977) which allowed for the licensing of 9 seater vehicles as taxis (Dickson, 1983). Consequently the sales of mini-buses and mini-vans in South Africa increased from 7319 in 1978 to 14,750 in 1982. It is estimated that two thirds of these "light buses" are operated illegally.

The method of pirate operations seemed to satisfy the requirements of black commuters and their increasing numbers accelerated the growth of this business. The increasing number of commuters have caused a decrease in the level of their public transit services. Several studies have shown a clear relationship between declining levels of service (increasing travel time and cost) and declining levels of satisfaction (Nesta, 1982). It seems that the major reasons of dissatisfaction from the public transit services do not exist when pirate services are considered. Transport factors such as crowding and transfers had considerable effect on dissatisfaction. Those who reported transfer waits longer than 15 minutes were predominantly dissatisfied. Socio-economic factors did not affect attitudes toward the number of transfers or the transfer waiting time, but bus-to-bus transfers were more unpopular than mixed transfers, probably because bus-to-bus commuters were particularly frustrated with waiting times at the transfer points (Nesa, 1982). Furthermore, a high anticipation for seat availability and punctual arrival at work also found among black commuters. The pirate operators provide direct services which eliminate these transport factors and allow the commuter using them at 7 a.m. rather than the bus

at 4 a.m. In a separate attitude study black commuters also mentioned that para-transit services provide them a fast way of getting to work on time (Nesta, 1979). In addition, such services provide more space for luggage than buses as operators add roof racks to the vehicles. These advantages to the commuter increased the demand for para-transit services, and obviously played a major role in the growth of the pirate transit sector.

As the effect of transfers on transit service level is greater in shorter trips (Stern, 1982) and crowding problems are more common in inter and intra urban trips when compared to rural-urban trips, pirate services began to spread into the urban areas. The growing number of para-transit operators in these areas turned the control much more difficult, thus encouraging a further concentration of pirate services in the major centers of both the homelands and South Africa. The following section examines this spatial trend.

THE SPATIAL RAMIFICATION OF PIRATE TRANSPORT

Transport studies in developing countries have shown (e.g. Leinbach, 1981) that mini-van transport is more likely to be used for longer journeys and sometimes for those trips which are carried less frequently. As mentioned earlier para-transit in general and pirate services in particular have mainly served the rural areas of the homelands and gradually have penetrated into the urban areas. For reasons discussed above change in the spatial distribution of the homelands population have shifted the travel market away from the rural areas. In 1981, for example, only 127,200 (17.2 percent) of the total border commuters worked in the white rural areas of South Africa whereas the rest, i.e. 612,500, commuted daily to white urban areas (Muller, 1981). Thus, the level of urbanization in the homelands have increased as shown in Table 2. On the average the annual growth rate of the urban population between 1970 and 1980 was 9.5 percent with many homelands doubling, or more, their urban sector during this period.

Source: Muller, 1983.

Modal split data covering the period 1976 - 1981 (Mastouroudes, 1982) was used to examine the spatial changes in the use of pirate services. Since explicite data on pirate services is not available, the share of taxis and para-transit in general was used instead under the assumption that a larger share of the latters also indicates a larger share of pirate services and therefore can be used as an indirect measure. Regression lines were calculated to examine the changes in the correlation between the average border commuting distance

TABLE 2. THE SPATIAL DISTRIBUTION OF BLACKS IN SOUTHERN AFRICA HOMELANDS.

Homeland	Urban Population		Annual Average Growth Rate 1970-1980
	1970	1980	
Homelands	595,520	1,420,618	9.5
Transkei	46,554	108,903	8.9
Ciskei	103,475	228,559	8.2
Bophuthatswana	127,245	208,422	5.1
Venda	681	5,486	23.2
Kwazulu	239,848	694,155	11.2
Kangwane	5,310	4,620	-1.4
Qwaqwa	1,295	13,961	26.8
Lebowa	66,107	118,073	6.0
Gazankulu	5,005	14,330	11.1
Kwandebele	—	23,109	—

Figure 2: Major Border Commuter Traffic Concentrations, 1981

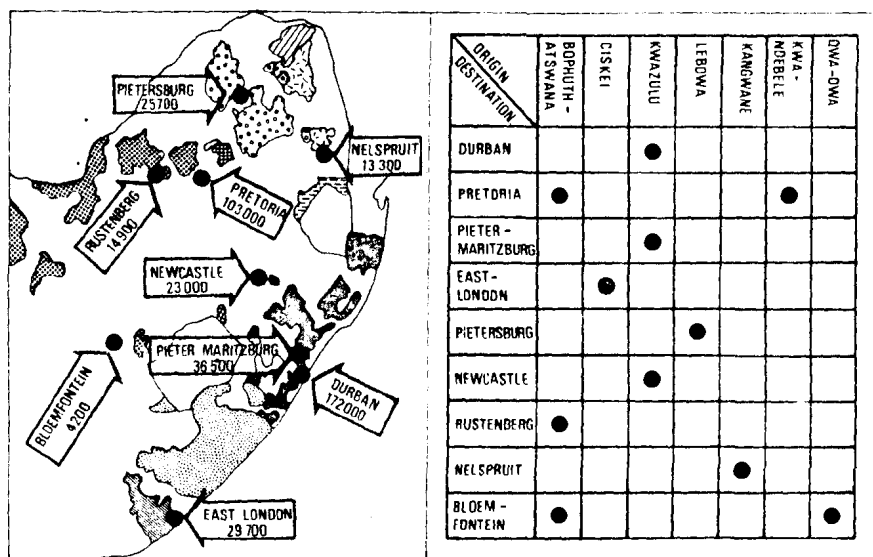


Figure 3: Transport Alternative for border Commuters in South Africa

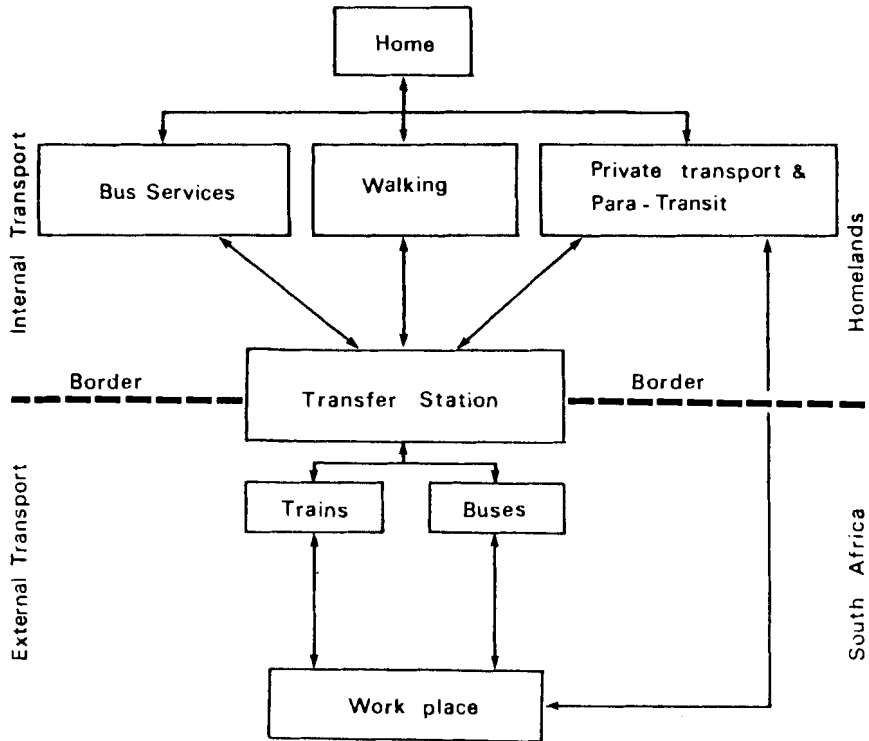
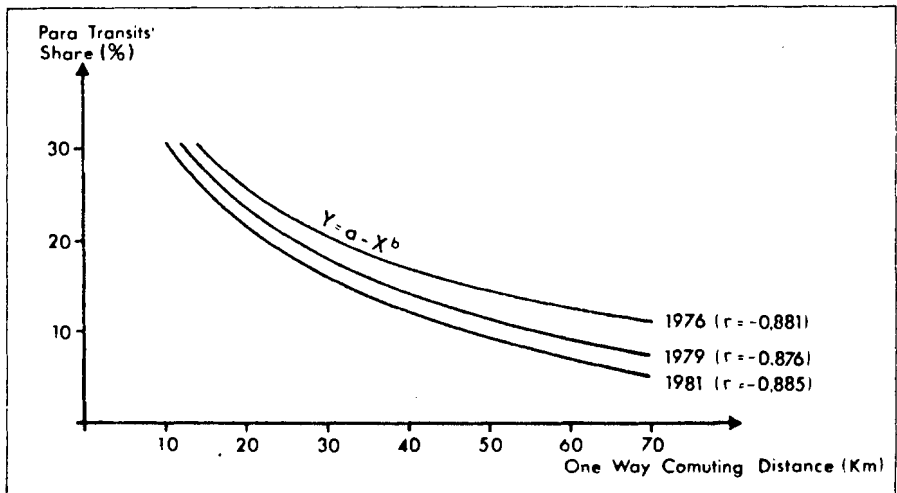


Figure 4: The changing shares of para-transit usage as a function of commuting distance



from each homeland and the share of para-transit services in conveying the respective commuters. The average commuting distances were calculated on the basis of a detailed origin-destination commuting data for each homeland and for each of the following years - 1976, 1979, and 1981. As urbanization increased in the homelands, commuting distances have decreased as the urban population have concentrated closer to the borders, and hence to the places of work. Figure 4 presents the three non-linear regression lines and clearly indicates that for each year separately the share of the para-transit services decreases with increasing distances (all correlations indicated in Figure 4 are significant at the 0.001 level).

Since the analysis covers only a short period the differences between the lines are relatively small but even though it is absolutely clear that the share of the para-transit services are decreasing with time in the rural areas and simultaneously spreading closer to the job markets. Thus, every year paratransit modes are serving less the long distance commuters but serving more the shorter distance trips. The implications of this spatial trend are discussed below.

DISCUSSION AND A POLICY PROPOSAL

With the expansion of pirate services closer to the urban areas and even into them, public bus services are facing several problems. Stating it very simply, there are fewer passengers to support the scheduled service and the bus operator is eventually forced to spread his constantly increasing costs across fewer people. The inevitable result is that the operator has to apply to increase his fares. If his application is granted, the authorities, as much for social as for any other reasons, are forced to consider increasing passenger subsidies at the same time. Because passengers tend to prefer para-transit modes which take them nearer to their homes, scheduled feeder buses are forced to run empty. In many cases feeder buses are withdrawn. Yet if this happens, there may not be sufficient taxis present at a particular time, and the bus operator is then accused of having insufficient vehicles to meet passenger demand. A struggle is likely to start at this point between bus operators and taxi drivers.

On the ground of this study a policy proposal can be offered. Various developing countries are suffering growing unemployment and therefore, in general, it seems to make no sense to block completely the growth of small business like the para-transit operations. On the other hand there is no way that para-transit mode, either legal or illegal, can move millions of passengers a year to work and back as mass transit does. Even if they can organize the

necessary routes and times, it is very unlikely that the road system could cope. The present study indicates that black commuters are prepared to pay premium for advantages like a shorter time journey, more space for luggage, less crowding, and no transfers. These demands can be met by encouraging para-transit systems in the rural areas where small vehicles can provide the demand without having feeder buses run empty. In the current situation the rural areas become less accessible, thus less attractive, the level of urbanization then increases, para-transit services are further spreading into the urban areas and consequently rural areas experience a further decrease in accessibility. Encouraging para-transit services in the rural areas may not only change this situation but also provide more job opportunities within these areas. Hiring services as such were also found more adequate to rural areas from purely economic reasons (Deaton, 1984; Stern, 1980).

In the urban areas a more rigid control should be practiced to legitimize para-transit operations. In the interest of road safety, in both the rural and urban areas, there may well be a need for some order such as clearly recognized areas from which para-transit modes may operate unharassed by petty bureaucracy. Regional para-transit systems may therefore be of benefit for both the small free enterprise and the public bus companies.

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