

## **FACTORS THAT INFLUENCE THE DOMESTIC DEMAND FOR AVOCADOS IN SOUTH AFRICA WITH SPECIAL REFERENCE TO URBAN BLACK CONSUMER PREFERENCES**

**J VAN ZYL and G J CONRADIE**

*Department of Agricultural Economics, University of Pretoria, Pretoria 0002*

### **ABSTRACT**

*Characteristics of the domestic demand for avocados in the RSA were determined. Consumption shows an increasing trend, while the demand is relatively elastic with regard to price and especially income. This implies that the Black market sector will probably show the largest increase in demand for avocados in the near future. Urban Black consumer preferences with regard to avocados were subsequently analysed by means of a survey amongst consumers and sellers in the Pretoria area.*

### **INTRODUCTION**

In a dynamic economic situation, decisions concerning price, promotion, distribution and product policy must be made almost continually. Ample knowledge and information of, inter alia, various demand factors, are necessary for the composition and maintenance of an efficient marketing strategy. Only then will there exist a thorough base for business control, strategic planning and forecasting (DuToit, 1982).

Increased production is not in itself a guarantee for increased welfare to producers. Goal orientated marketing and more economic-scientific, justifiable marketing strategies are also indispensable, particularly over the longer term (Scholtz, 1971,5).

In this study an effort was made to determine some characteristics of the demand for avocados in South Africa. Several important coefficients, for example the price elasticity, income elasticity and the cross elasticity of the demand for avocados, as well as that of individual components thereof, were calculated. These coefficients provide useful and almost indispensable information concerning the effects of price changes, and mutual substitution and complementarity. Based on these results, a survey of urban Black consumer preferences was also undertaken,

Shepherd and Futrell (1969,8) are of the opinion that the first and most basic agricultural marketing task is '...to determine accurately in quantitative and qualitative terms just what consumer demands are in time, place and form and just what changes are taking place in those demands with the passage of time'.

## CONSUMPTION TRENDS

Monthly sales on the fourteen fresh produce markets<sup>1</sup> were used as basis for the calculation of domestic urban consumption trends for avocados in the RSA. The results are shown in Table 1.

<sup>1</sup>) Pretoria, Johannesburg, Bloemfontein, Kimberley, Cape Town, Port Elizabeth, East London, Durban, Pietermaritzburg, Welkom, Klerksdorp, Vereeniging, Springs and Uitenhage.

TABLE 1 Consumption of avocados in urban areas of the RSA, 1978-1987

Year	Total consumption (ton)	Per capita consumption (kg per capita)
1978	8070,4	0,62
1979	7150,0	0,54
1980	6627,5	0,49
1981	7586,3	0,55
1982	10209,4	0,74
1983	11781,2	0,83
1984	8012,4	0,55
1985	12697,4	0,88
1986	10936,6	0,72
1987	12362,3	0,82
Annual Growth rate (1978-1987)	6,28%*	4,51%*

\*Significant at the 5 per cent-level.

Source: Processed from *Abstract of Agricultural Statistics* (Directorate Agricultural Economic Trends, 1988)

The results shown in Table 1 represent an understatement of the actual consumption of avocados in urban areas because not all avocados are channelled through municipal markets. The figures do, however, give an indication of the trends in domestic avocado consumption. It must also be taken into account that domestic sales of avocados are largely a residual of production, as more than half of the South African produce was exported in the years under consideration.

The per capita consumption of avocados in the urban areas of South Africa compares favourably with that in European countries. Results are as follows:

COUNTRY	AVERAGE PER CAPITA CONSUMPTION 1987-87 kg/capita
RSA	0,657
United Kingdom	0,195
France	1,012
West Germany	0,064

Notwithstanding the relatively high per capita consumption of avocados in the RSA, there is potential for improvement. It was estimated, for example, that the market

potential for avocados in France is in excess of 2,0 kg per capita per annum (Aldrich, 1985) double the present level in the RSA.

## DETERMINANTS OF DOMESTIC AVOCADO CONSUMPTION

The following functional relationship between certain variables were hypothesised and tested:

$$\text{Avocon} = f(\text{Avopr}; \text{Reinc}; \text{Subpr}; \text{Compr}; \text{Time})$$

where:

Avocon = domestic per capita demand for avocados on 14 National Fresh Produce markets;

Avopr = real weighted price for avocados on 14 National Fresh Produce markets;

Subpr = real weighted prices of different possible substitutes;

Compr = real weighted prices of different possible complements;

Time = time (1958/59 = 1); and

Reinc = real monthly income per capita.

All the above specified demand functions were solved with actual and logarithmic transformed data. Multiple regression analyses were used to determine various statistical measures of the domestic demand for avocados in South Africa. The methods used are described in Van Zyl (1986a).

In general the fits were very satisfactory and the results were therefore used for estimation of the various elasticity measures:

a). The price elasticity of domestic demand for avocados is relatively elastic, ranging from 1,13 to 1,93, This means that a 10 per cent decrease in price will increase the quantity demanded by between 11,3 and 19,3 per cent and vice versa, which in turn implies that avocado producers can increase their income by lowering prices.

b). The income elasticity of domestic demand for avocados is statistically highly significant and also relatively elastic, ranging from 1,21 to 2,39. This means that a 10 per cent increase in income will increase the quantity demanded by between 12,1 and 23,9 per cent. This implies that avocados are a luxury product. This characteristic holds important considerations for the future. The non-uniform changes in per capita income over time will cause structural changes in the domestic demand for avocados. The relatively faster rising per capita income of Blacks against that of other population groups, will probably result in an increased demand from that sector.

c). No near substitute or complementary product for avocados was found to exist in South Africa. This was shown by the non-significant cross elasticities that were obtained

from all the fitted equations where such variables have been included,

## IMPLICATIONS OF THE RELATIVELY HIGH INCOME ELASTICITY OF DEMAND FOR AVOCADOS IN THE RSA

The relatively high income elasticity of demand for avocados (1,21 to 2,39) implies that expendable income has a large influence on the consumption of avocados. It is therefore relevant to study the income patterns of the South African population. Table 2 and Figure 1 depict the situation.

TABLE 2 Average annual growth rate in population and average salaries for the different population groups, 1970-1986

Population group	Population growth (%)	Growth in average salaries (%)
Whites	0,95	12,4
Coloureds	2,45	14,0
Asians	1,96	16,0
Blacks	2,39	16,8
Total	2,12	14,1

Source: Central Statistical Services (1987).

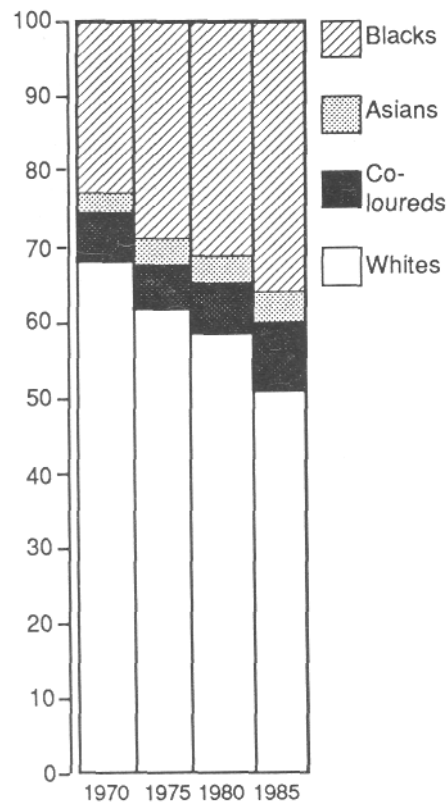


Fig 1 Relative share of the different population groups in the total personal expendable income of the RSA, 1970-1985 (Van Zyl, 1986).

According to Table 2, Blacks have had the highest growth rate in average salaries. Coupled with the high population growth rate (Table 2), it resulted in a substantial increase in the relative share of Blacks in the total personal expendable income of the RSA (Figure 1).

The non-uniform changes in per capita income over time will therefore also cause structural changes in the domestic demand for avocados in the RSA. The relatively faster rising per capita income of Blacks against that of other population groups, and the importance of income in the demand for avocados, will probably result in an increased demand from the Black sector. All of this implies that the Black market sector probably has the largest potential for an increase in domestic avocado consumption in the near future.

Urban Black consumer preferences with regard to avocados, are subsequently discussed,

## **A SURVEY OF URBAN BLACK CONSUMER PREFERENCES**

### **Results of the survey conducted amongst consumers**

A survey was conducted in the Black townships in and around Pretoria, in order to determine Black consumer preferences regarding avocados. Students of Vista University, well versed in the basic techniques of field-work, conducted the survey. Of all the respondents, 40 per cent resided in Mamelodi, 21 per cent in Atteridgeville and 24 per cent in various parts of Bophuthatswana.

In the above-mentioned areas it was found that 40 per cent of all respondents bought fruit on a daily basis while 26 per cent purchased fruit less than three times a week.

Twenty-seven per cent of the respondents bought avocados. The same percentage, apparently, refrained from buying avocados. Thirty-nine per cent made purchases at least once a month and 18 per cent at least once a week.

Of the consumers questioned, the majority (41 per cent) cited the price of avocados as a reason for not buying, 35 per cent considered availability as a problem and a further 23 per cent disliked the taste. It is interesting to note that 48 per cent of all purchases were from street vendors, with supermarkets and greengrocers being preferred by 22 and 20 per cent of consumers, respectively. A large number of consumers (24 per cent) were unable to obtain ripe fruit, which caused them not to buy any avocados at that time. This therefore resulted in a loss of sales. Sixty-four per cent of consumers stated that they would buy more avocados if it were less expensive, 53 per cent if it were of better quality and the same percentage (53 per cent) considered unripe avocados, together with the difficulty in obtaining them, as reasons for not buying more.

A very large number of consumers considered avocados healthy (80 per cent), 60 per cent liked the taste while a small number believed that it had supernatural powers (9 per cent). With regard to the latter, a large number of respondents failed to answer, an indication of possible indignation at being asked such a question.

Thirty-three per cent of consumers enjoy avocados on bread while 37 per cent consumed it on its own. These results correspond to the phenomena of avocados eaten

during breakfast (35 per cent) and consumed between meals (44 percent).

With regard to purchase, 28 per cent of the respondents preferred ripe fruit. This corresponds closely to the inability to obtain ripe fruit (24 per cent) mentioned earlier. In order to determine the ripeness of an avocado, 80 per cent considered softness as a determining factor. Thirty-five per cent of consumers will not buy avocados with spots while the same numbers were willing to do so. A further 18. per cent were prepared to buy spotted fruit but did so with reservations. Generally, avocados are bought from street vendors (44 per cent) and supermarkets (25 per cent), this, once again, corresponds to the earlier finding of all purchases. Consumers tend to buy up to three avocados at a time (one at a time 38 per cent; two to three 33 per cent) which is probably the reason for their preference of individually packed fruit (44 per cent). Only 17 per cent preferred fruit packed in cardboard boxes.

Only 19 per cent of consumers showed a preference for large avocados, while 36 per cent were neutral with respect to size and 33 per cent demanded a medium-sized fruit. Seventy one per cent of consumers preferred green skin avocados rather than brown or black types.

It is obvious that availability of avocados caused problems. In 16 per cent of all cases it was freely available, while in 18 per cent of cases it was unavailable.

Surprisingly enough most respondents realised that avocados were cheaper at supermarkets (30 per cent) and greengrocers (24 per cent), but still did most of their purchases from vendors.

Upon being asked to rank their favourite fruits, 12 per cent of the respondents placed avocados at the top of their list, 11 per cent had it as a fifth choice and 14 per cent ranked it as their sixth and last choice. More important however, is the fact that overall it was ranked fourth.

Lastly, 61 per cent of consumers preferred a smooth skin to the 29 per cent who preferred a rougher skin. Results of the survey conducted amongst the sellers

In this survey, 42 per cent of all respondents were from Mamelodi and 30 per cent from Bophuthatswana.

A surprisingly high level of permanency was noted amongst the vendors. Seventy-one per cent had been active for more than a year. Sixty per cent had been selling at the same location (spot) and had never sold elsewhere.

The sellers estimate that 30 per cent of consumers in the areas concerned buy avocados which corresponds to the buyers' figure of 27 per cent. It seems that the purchase of certain products, according to the sellers, can be attributed to availability (51 per cent), nutritional value (60 per cent), taste and price (31 per cent each).

Avocados are available from vendors 40 per cent of the time. Eighteen per cent do not sell avocados, while 42 per cent sell avocados. Those that never sell advocados, or do so only occasionally, did so for several reasons, namely availability (20 per cent), price (16 per cent) and lack of demand (18 per cent), Consequently, 58 per cent of the sellers were of the opinion that more could have been sold, had it not been for the (high) price, 54 per cent blamed quality and 53 per cent availability. In general it appears that

avocados are too expensive for mass consumption.

Contrary to the consumers, sellers maintain that the demand for large avocados are the highest (43 per cent), while dark and green avocados were almost equally popular at 36 and 34 per cent respectively. A number of reasons can be attributed to this discrepancy.

The number of respondents who sold fewer than 10 avocados daily (40 per cent) was almost equal to those selling between 10 and 50 daily (36 per cent).

Seventy-five per cent of respondents sold both ripe and green fruit. Sellers were of the opinion that purchasers can be divided equally between both sexes. Vendors substantiated the result found in the previous study relating to the number of fruit purchased at a time (mostly one at a time 33 per cent; 20 per cent bought two at a time and 11 per cent bought more than five). It was difficult to determine the age groups of buyers. In 47 per cent of cases sellers were uncertain, while 29 per cent were sure that younger people were their predominant customers. According to sellers, buyers determine the ripeness by means of the softness of the fruit (56 per cent).

In 76 per cent of the cases sellers obtained their fruit from markets, in 16 per cent of the cases from bakkies and 14 per cent from greengrocers. Most of the respondents considered these sources as adequate (73 per cent). The market was considered to be the cheapest source in 67 per cent of the cases, while the bakkies were considered to be the cheapest in nine per cent of cases. When not buying from the cheapest source, 18 per cent gave good service as a reason.

The profit per avocado sold was between 10 and 20 cents in 35 per cent of cases; less than 10 cents per avocado in 25 per cent of cases, and more than 50 cents in 15 per cent of the cases.

Sellers had a definite preference for cardboard boxes (66 per cent), most probably due to the number of avocados purchased at a time (33 per cent buy less than 20 at a time and 35 per cent between 20 and 50 at a time).

## **CONCLUSION**

Total and per capita consumption of avocados in the urban areas of the RSA increased by 6,3 and 4,5 per cent respectively per annum, during the previous decade. Avocado consumption in the RSA compares favourably to that of Europe.

Multiple regression analyses show that the domestic demand for avocados is relatively elastic with regard to price and especially income. No near substitute for avocados was found to exist in South Africa.

The relatively high income elasticity implies that avocados are a luxury product. The relatively faster rising per capita income of Blacks, against that of other population groups, will probably result in an increased demand from that sector. Urban Black consumer preferences with regard to avocados were subsequently analysed by means of a survey amongst consumers and sellers in the Pretoria area.

It seems that Blacks are generally highly price and quality conscious. Availability of avocados also plays a crucial role. Purchases are of a high frequency and generally

involve small quantities (less than three at a time).

## REFERENCES

- ALDRICH D, (1985). 'Die omvang van avokadoproduksie met spesiale verwysing na die Franse mark'. *Special report*. Department of Agricultural Economics and Marketing, Pretoria.
- CENTRAL STATISTICAL SERVICES, (1987). *RSA Statistics in Brief*. Government Printer, Pretoria.
- DIRECTORATE AGRICULTURAL ECONOMIC TRENDS, (1988). *Abstract of Agricultural Statistics 1988*. Department of Agricultural Economics and Marketing, Pretoria.
- DU TOIT J P F, (1982). '*n Ekonomiese ontleding van die vraag na en aanbod van vleis in Suid-Afrika*. Unpublished MBA-thesis, University of Pretoria, Pretoria.
- SCHOLTZ A P, (1971). Marketing planning and adjustment in agriculture in the seventies. *Agrekon*, 10(1), 47-56.
- SHEPHERD G S & FUTRELL G A, (1969). *Marketing Farm Products*. Iowa State University Press, Ames, Iowa.
- VAN ZYL J, (1986a). The domestic demand for maize in the RSA. *Agrekon* 25 (3), 64-68.
- VAN ZYL J, (1986b). Faktore wat die binnelandse vraag na mielies beïnvloed. *Mielies/Maee*, 71, 14-18. September 1986.