Mapping the competitive food chain for fresh produce retailers in
Tshwane, South Africa

By
Hilton Madevu¹, André Louw² & Leah Ndanga³

1. *M.Sc. Student*: Dept. of Agricultural Economics, Extension and Rural Development, University of Pretoria & *Business Operations*: Standard Bank Group Ltd. Head Office, No.5 Simmonds Street, Johannesburg, South Africa. Email: Hilton.Madevu@standardbank.co.za Tel: +27 11 636 0637 Fax: +27 86 667 8732

2. *Professor & ABSA Chair in Agribusiness*: Dept. of Agricultural Economics, Extension and Rural Development, University of Pretoria, Pretoria 0002 South Africa. E-Mail: andre.louw@up.ac.za Tel: (+27 12) 420 5772 Fax: (+27 12) 4203247

3. *M.Sc. Student*: Dept. of Agricultural Economics, Extension and Rural Development, University of Pretoria, Pretoria 0002 South Africa. E-Mail: lzbndanga@tuks.co.za Tel: (+27 12) 420 4584 Fax: (+27 12) 420 4958
   *(Corresponding Author)*

*Contributed Paper prepared for presentation at the*

*International Association of Agricultural Economists Conference,*

*Beijing, China,*

*August 16-22, 2009*

Copyright 2009 by Madevu, Louw & Ndanga. All rights reserved. Readers may make verbatim copies of this document for non-commercial purposes by any means, provided that this copyright notice appears on all such copies.
Mapping the competitive food chain for fresh produce retailers in

Tshwane, South Africa

Abstract

Although several previous studies have ascertained that smallholder farmers prefer informal markets, a few vertically integrated retail chains increasingly dominate South Africa’s agro-food supply chain. The onset of this trend has led to the demise of a large number of general dealers in favour of the sleek new stores. However, greengrocers and hawkers in the fresh produce market have proven to be resilient to this onslaught. This resilience is of interest to this study. The study used ‘Porter’s forces’ model and chain analysis to structure the research and seeks to describe and analyse the competitive situation by determining the relative competitive and strategic behaviour of retailers and to map the sector’s value flows. The main findings were that tridimensional competition was mostly in the middle-income areas. The low-income areas were dominated by hawkers while large chains dominated the high income areas and greengrocers were mostly confined to middle-income areas.

Key Words: Competition analysis, fresh produce retail
**Introduction**

The fresh produce industry possesses some characteristics that make it a particularly difficult sector to engage. Researchers have identified four important challenge factors in fresh fruit and vegetable (FFV); namely perishability, susceptibility to shocks, seasonality and subjective standardisation (Farina & Machado, 1999; Cook, 2003; Louw et al., 2004).

Fresh produce markets (FPM) were the most prominent players handling most of the FFV in South Africa (Rathogwa et al., 1998). At the second level were the wholesaler-retailer sector followed by FFV retailing. This existed in both the formal and informal sectors. The formal FFV retailing was mainly in supermarkets and greengrocers. The informal sector included hawkers, trading at set locations and operating mobile units, as well as *spazas* (tuckshops). Informal traders represent a major force in the fresh produce sector. According to Louw et al. (2004), hawkers at the Tshwane Market (TM) represented 27-29% of monthly turnover and up to 50% at the Johannesburg market.

In the face of expanding corporate (chain) supermarkets, most competing forms of food and grocery retailing (such as bakeries and butchers) tended to be overrun for market share and absorbed by supermarkets both locally and internationally (Brandt, 2004; M+M Planet Retail, 2004). However FFV retailers, informal traders and greengrocers, in South Africa have proven to be resilient. All three FFV retailer formats appeared to attract their own set of consumers and successfully competed for market share.

The relatively slow takeover of supermarkets in the fresh produce market is not unique to South Africa. Many researchers found that shifts in the retail trade tended to occur first in
dry goods and later in perishables. Reardon et al. (2003) attributed this lagged penetration to the ability of small shops (greengrocers) and traditional wet markets, to maintain a fresh and convenient shopping option. However this explanation failed to explain why the lag was peculiar to the FFV markets.

This study asserts that understanding this competitive behaviour is important in understanding how the FFV retailers coexist. Lessons learnt could then be extended to other sectors where informal and small businesses are struggling. In analysing the nature of this competition in FFV retail, the study mapped the value chains within the alternate retail channels using Tshwane Metro as a case in point. The chain maps also presented the power dynamics and the degree of chain governance in the FFV retail market. The practical relevance of the study is on multiple levels. Firstly for the FFV entrepreneur, the study provides a map of possible entry points into this food chain, the current management trends and the market niches available. For the government, aid officials and small business, it highlights bottlenecks to an efficient FFV marketing system. Lastly, for the academics and students it provides insight into a somewhat opaque segment of the South African food chain and thus offers a foothold for future study.

The paper is organised so as to first review literature on the sector and results of key informant interviews are discussed in the following section. This is followed by the methods in the third section. The fourth section is a presentation of the findings, the fifth section summarises the findings using the performance profiles and chain maps. The sixth and final section presents recommendations on how to improve (upgrade) the competitiveness of each of the competing food chains.
FFV Retailing in South Africa: Literature Review & Exploratory Study

According to the DoA (2005a), the South African food retail market was worth R165 billion (US$ 27.5 billion) in 2004. In the same statistical abstract, fruit and vegetable retail (including potatoes) was said to have contributed towards at least 16% of this food market. The major players sharing this fresh produce retail market can be classified into three broad levels namely wholesalers, wholesaler-retailers and retailers (HSRC, 1991). In practice, there is considerable overlap in the market. None the less, the distinctions serve as a useful tool in giving an overall perspective of the sector.

Fresh Produce Markets (FPMs) were the dominant players as wholesalers in the FFV sector (DoA 2005b; AgriTV, 2006) that had consistently handled over half of all domestic fresh produce over the past ten years. In 2005, FPMs handled almost 50% of vegetables and nearly 20% of fruits in South Africa. Other fresh produce wholesalers include non-syndicated FFV wholesalers (Asian markets), wholesale subsidiaries of retail chains (buying/distribution centres) and farmgate sale.

Wholesale-retailers primarily specialise in Fast Moving Consumer Goods (FMCG). However a relatively new form had emerged that did trade in FFV including Fruit & Veg City chain (established 1993). These acted as both wholesalers and retailers by marketing to the public, smaller retailers as well as some caterers.

There are currently six major supermarket chains in South Africa that are aggressively expanding into Africa. These are Pick’n Pay, Shoprite, Spar, Woolworths, Massmart and Metro Cash and Carry. They perform both the retail and wholesale functions. The
spreading dominance of supermarkets could be viewed as progressive for livelihoods and food security because supermarkets brought higher product standards, variety and lower prices (D’Haese & van Huylenbroeck, 2005). On the other hand this expansion was typically at the expense of small local retailers, thus diminishing local entrepreneurship. Researchers warned that supermarkets would eventually take over the FFV markets as in other food sectors. Thus they have implemented programs to mitigate this possibility (DFID RNRA, 2005; www.regoverningmarkets.org).

Greengrocers were classified under the larger population of smaller stores that collectively controlled 30% of turnover (Economist Intelligence Unit, 2004). This share was on a general decline but not necessarily among the greengrocers. Greengrocers showed some versatility in their ability to co-exist with both the hawkers and supermarkets in FFV retail. Greengrocers were able to compete against supermarkets in the upmarket shopping malls where the urban population increasingly shopped. Concurrently greengrocers were competing vigilantly against hawkers in the townships (Van Zyl & Conradie, 1988).

Accurately measuring the social and economic impact of the informal sector in South Africa remained a challenge due to its unstructured and none permanent nature, and that its structure and performance was not routinely monitored along with other national economic data. However, in a once off survey Statistics South Africa estimated hawkers’ total turnover to be R2.62 billion in February 2002 alone (STATSSA, 2002:4). Informal traders represented a major force in Tshwane’s fresh produce sector. Censuses conducted in Tshwane (Ligthelm & Van Wyk, 2004) respectively found a total of 3614 and 3385 informal retailers.
Some commentators argued that the informal sector was an important means of reaching the lower income markets, ensured their food security; and was an employer especially for low skilled groups. They also found that it had more legitimacy than formal business in low income areas where it was perceived to be exploitative; was consumer oriented hence demand driven; promoted entrepreneurship and economic activity in the poor areas (Karaan, 1993; Van Rooyen, 2002; Ligthelm & Van Wyk, 2004). Conversely, antagonists argued that it was merely a survivalist trade (Rauch, 1991) and thus only generated a subsistence income (Morris et. al., 1997). Marius (1987) concluded that an informal economy was an indicator of a general level of poverty and under-employment in an economy. Of note however is that these authors fell short of condemning the informal sector as detrimental to an economy. It was also ascertained in previous studies that smallholder farmers prefer informal markets such as hawkers, because they offer better bargain in terms of prices. In addition they are not stringent on quality as they take anything availed to them and also that there are less transaction and bureaucracy costs incurred by farmers in supplying their commodities (Louw et. al., 2008).

**Interviews & Pilot Survey**

An interesting finding was that although all three FFV retail formats (supermarkets, greengrocers and hawkers) exist across Tshwane, their relative strengths as market competitors vary according to the affluence areas. The tri-dimensional nature of retail competition was most evident in the middle-income areas (LSM 5, 6 & 7) of Tshwane where all three formats appeared to be virulent. This was less so in other areas. This
observation was contrary to comments in Ligthelm (2006) that hawkers only accessed low income areas.

The low-income areas (LSM 2, 3 & 4) were dominated by informal traders and there were very few greengrocers present. The few supermarkets present in these areas did not deal in fruits or vegetables. In high-income areas (LSM 8, 9 & 10) the FFV market was held almost exclusively by supermarkets and the wholesale-retail chain Fruit and Veg City. This outcome was facilitated, by local residents’ access to private transport, and an observed preference for shopping malls. A few greengrocers were observed in shopping centres within these neighbourhoods and hawkers were confined to transport nodes where they mostly served non-locals (DOT, 1998) in transit.

**Research Methods & Procedure**

Porter’s forces competition model (Porter, 1979) was chosen as the overall guide to the investigation over the more empirical modelling techniques because of the lack of availability of comprehensive and reliable financial data and documented marketing strategies among the FFV retailers. This framework was used in conjunction with the marketing mix (Ps) and used chain analysis (CA) as the operationalizing tool. CA was used in unpacking the retail section by identifying role-players; their relationships and interaction. Closely associated to these tools were chain mapping, performance profiling and the factor evaluation matrix (FEM), which helped to quantify this otherwise qualitative evaluation.
Data collection was conducted in two phases. The first was a pilot and case study conducted during the preparatory and literature review stages. The second phase included a survey of 120 fresh produce retailers in the City of Tshwane. Phase 2 followed a systematic, although non–probabilistic, sample selection process that paid cognisance of the available marketing data and findings from phase 1 (pilot study). The sampling procedure was a multi-level stratification followed by a random sample of the fresh produce retailers in Tshwane.

Figure 1 shows an overview of the sample design. Of note is that the purposeful selection of five hawkers (stratum 6) and two greengrocers (stratum 5) competing with each nodal supermarket (stratum 4) formed a 1:2:5 sampling ratio. In total 120 respondents were interviewed after being selected from a six (6) level sampling frame thus composed of 15 supermarkets, 30 greengrocers and 75 hawkers.
Findings & Discussion

The first set of marketing mix variables in terms of place revealed that FFV retailers generally sought to locate their businesses at prime/busy areas, which entailed locating at the transport nodes and areas with high population densities. Informal traders were found to operate from a variety of locations that may be classed into three: fixed, semi-mobile and roving. Fixed location traders formed the majority, 89.5% of the group. It was also found that the area dedicated to FFV was on average smaller in the supermarkets (135 square meters) than in the greengroceries, (200 square meters). This meant that greengrocers could carry more variety. As expected hawkers were the smallest with a mean of 5 square meters.

It was established that informal traders’ businesses were relatively young, averaging six years. This reflected the relative ease of entry, exit and recent improved tolerance for the sector by city authorities. The greengroceries were generally found to be old businesses with average of 23.7 years. Combined with the low incidence of new entrants this indicated a business format in atrophy. The supermarkets had a fairly balance set of ages ranging from 3 to 75 years. Partnerships were the most prevalent ownership structure among FFV hawkers, while greengroceries were primarily family run thus confirming their contribution to entrepreneurship. Supermarkets were a mix of corporately owned stores, franchises and family owned businesses.

Monthly FFV turnover for informal traders varied from R600 to R63 515 per month and averaged at R15 538 per month while the greengrocers’ FFV turnover varied from R21000 to R400 000 per month, with an average of R165 521. Supermarket FFV turnover
ranged from R7 000 to R1.5 million per month and averaged at R480 692 per month. In terms of pricing behaviour, informal traders’ charged a mean mark-up of 32.9% for FFV. In greengroceries the average was 44.7%. Supermarkets’ pricing data was plagued with non-response errors. Based on the few valid responses supermarkets had mean and modal mark ups of 22.5% and 15.0% respectively. Generally the hawkers charged both the highest and lowest margins for FFV. This is in contrast to assertions by Van Zyl and Conradie (1988) that (for avocados) supermarkets were consistently cheaper followed by greengrocers and hawkers being the most expensive channel. Of note, however, was that the authors were surveying consumer perceptions and did not quantify this perceived pricing hierarchy.

The informal sector displayed a cost advantage in the competition because they had few overhead costs and personnel costs that could offset the scale economies enjoyed by supermarkets through corporate buying. Greengrocer owners reduced administrative costs by personally performing these tasks as owner-managers thus leaving more funds for operations. On the other hand the greengrocer overheads and staffing costs were still quite high, constituting at least a 20% of the monthly costs. In addition they had limited scale advantages over the hawkers.

Retailers reportedly performed packaging (breaking bulk), washing, cutting, freezing, and ripening at store level. Over 75% of hawkers, 50% of the greengrocers and a 33% of the supermarkets were performing at least one processing activity but this was usually limited to repackaging. Tshwane market (TM) and Marabastad market were the suppliers of choice for both informal traders and greengrocers. All informal traders in the survey stated that they did not enter into any form of contracting, verbal or otherwise with
suppliers. Greengrocers and independent supermarkets occasionally had informal reservation arrangements with market agents. Supermarket outlets were sourcing from the buying centres (73.3%) and the TM (26.7%). Most corporate supermarkets’ store level management were ignorant of most procurement issues and had no choice over supply source but to order from buying centres. Although franchised stores had more freedom over supply source, they found that the buying centres offered the best deals and thus they only used produce markets in cases of stock-outs of key produce lines. Non-syndicated supermarkets behaved similar to the greengrocers and primarily patronised the TM and Marabastad markets.

For the promotion marketing mix variables, hawkers stated that they relied on personal selling as the only activity creating awareness for their businesses. Among the greengroceries, price discounts was their favourite mechanism. This was cited as the primary strategy in 64.5% of the cases. Non-syndicated supermarkets were similar to greengrocers in FFV promotions while corporate supermarkets were seen to use the full array of promotional tools of mass marketing tools, from television and radio promotion to print advertising and publicity. However this strategy was implemented at corporate level focused on promoting store brands and was rarely product specific. Surprisingly, most hawkers (98.7%) were able to define their target markets than greengrocers and supermarket managers as the latter two typically stated that they targeted ‘all people’ in 48.4% and 46.7% of the cases respectively.

The comparatively low amount of market targeting among the supermarkets and greengrocers may be explained by the observation that the two traded in a larger variety of merchandise in store. Another issue to consider, in the case of corporate supermarkets,
was that store level respondents were not privy to the strategic marketing decisions involved in targeting and segmentation. Therefore observing the location of stores and differences in varieties of stock were clearer indicators of the intended market targets than the store managers’ perceptions. Enumerators observed that greengrocers carefully avoided commenting directly on any racial elements of their typical customer. However enquires into perceived shifts in the industry revealed an implied view that the increasing black population in a greengrocer’s vicinity spelt a decline in patronage. Another overall but expected outcome was that market targeting was a function of location with those in residential areas targeting residents and those in business areas focusing on workers in the vicinity.

Results revealed that most retailers in all three channels perceived their top selling point to be low prices. This confirmed that lowest prices were not the reserve of any particular channel. Supermarkets and hawkers found intra-format competition (competition amongst themselves) to be more serious than cross-format competition. On the other hand greengrocers felt that cross format competition, particularly with supermarkets, was the most serious concern. A summary of the comparative use of the marketing mix is given in Annex 1.

**Mapping FFV Flows**

This section presents a mapping of FFV retail thus graphically summarising the findings on what links and market governance relationships prevailed in each of the three retail channels using methods recommended in Humphrey (2005). The following figure 2 traces the overall flow of FFV from producers to the consumers in the city of Tshwane.
Figure 2: Overview of supply route for fresh fruit and vegetables in Tshwane

Sources: Own findings, Dodds & Sedutla (2005) and Ligthelm & Van Wyk (2004)

A further breakdown of the value chain associated with the informal FFV retail is as in figure 3.
Of note is that most links in this channel are arms length relationships (short term and transaction related). The exception included the directed link between municipal markets
and their semi-autonomous satellite markets. Another was the balanced relationship with customers who were said to share a kinship and good rapport.

The greengroceries channel is shown in figure 4. Similar to the previous flow chart, only links showing FFV that eventually went through the greengroceries were shown.
Compared to informal traders, the greengrocers enjoyed closer links (balanced relationships) with market agents due to the larger volumes traded per transaction. On the other hand they had weaker links to end consumers than the hawkers.

The supermarket chart (figure 5) featured more organised links in the competition. This illustrated their stronger bargaining power and the higher level of concentration.
Of note in figure 5 is the absence of the wholesale-retailers in the supermarket channel. This was replaced to some extent by the distribution centres (DC). Another highlight in the figure is the weaker link between supermarkets and the catering and hospitality industries than in the case of greengrocers.

**Conclusions**

A key challenge for all FFV retailers including hawkers, in the product upgrade realm, is how to cope with fluctuating demand and wastage costs. To solve this would require better means of accessing market information, say through cellular SMS market updates as well as data on supply and demand trends, all of which would facilitate better FFV demand forecasting. Armed with this, the informal traders could improve the timing of their stocking levels in line with the demand and thus reduce wastage/spoilage loses. This solution may be expensive or beyond the scope of the individual hawker but is a viable possibility if a group were to seek such services. A possible source of these services is the municipal markets because they have expertise in the field and have a standing mandated to develop and assist small businesses. Another possible partner in the suggested upgrade is the National Agricultural Marketing Council (NAMC).

The informal traders at the store fronts are unlikely to disappear in South Africa in the near future. Therefore rather than view them as a threat, supermarkets could see opportunities for co-opetition. One potentially replicable model was found where a supermarket began supplying hawkers with their FFV requirements at just below retail price. This was a win-win situation because it removed the need for the hawkers to travel
to the FPM while the previously struggling supermarket FFV section made a profit by moving higher volumes of FFV. This also provided an opportunity to negotiate trading in different product ranges to reduce direct competition. The model could also be combined with selling a market information provision and demand forecasting service to the hawkers. Similar to the greengrocers’ case this would not cause a conflict of interest given that only a minority (26.7%) saw them as competition and even so, this strategy would constitute turning an adversary into a potential customer.

From the foregoing it is clear that despite the global dominance of supermarkets elsewhere in food markets, fresh fruit and vegetable chains still allow for the participation of smallholder farmers, especially in supplying to FPMs, informal markets and greengrocers. Although small scale farmers lack volumes and consistency, through collective action initiatives they are able to actively participate in modern agri-food supply chain. In this way, despite the global trend, in southern Africa at least, their future is not as bleak.

**References**


Fresh Produce Marketing. Report 1 Johannesburg Fresh Produce Market. NAMC, Pretoria


Cited Key Informants

Du Toit G. (2005). Chief Executive Officer, Freshmark Distribution Centre, Centurion, Tshwane

Annex 1: Comparative use of the marketing-mix across the three channels

<table>
<thead>
<tr>
<th>Variable</th>
<th>Informal FFV Retail</th>
<th>Greengrocers</th>
<th>Supermarkets FFV retail</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Place</strong></td>
<td>• A young (6.0 years) set of retailers located at transport nodes with small (4.8 m²) often movable displays</td>
<td>• Relatively old (23.7 years) set of businesses found at neighbourhood centres.</td>
<td>• A balanced mix of old and new outlets (average 25.3 years) located in shopping malls and centres with a relatively large area under FFV (135 m²)</td>
</tr>
<tr>
<td><strong>Price</strong></td>
<td>• Low with a mean mark-up of 33.0%</td>
<td>• Low on high volume ranges with mean mark-up of 41.7%</td>
<td>• Low, mark ups are kept secret but estimated at 22.5%</td>
</tr>
<tr>
<td><strong>Product</strong></td>
<td>• Source from FPM &amp; satellite markets • High volume and quality over a limited range of popular FFV • Low if any carry over stock helped keep freshness and quality up to counter lack of shelter and refrigeration • Repackaging is the main processing activity with little else done • Strong personal relations &amp; kinship bonds with customers</td>
<td>• Source almost exclusively from FPMs but Marabastad satellite used in stock-outs • Key in this channel was carrying a wide range of high quality produce. This comes at a cost of high wastage • Most repackaged FFV in store but a few also did some washing, cleaning and pre-cutting • Relatively personal/neighbourly rapport with little queuing</td>
<td>• Main source are direct from farmers but also include FPMs and off season imports • Relatively wide product range and quality range. Dependant on store location, brand and accepted balance between wastage losses and quality • Repackaging washing and cleaning performed mainly at DC but some in store • Impersonal service &amp; queues</td>
</tr>
<tr>
<td><strong>Promotion</strong></td>
<td>• Aggressive personal selling is the main promotion route but also keep neat displays and personal rapport with clients • Also run limited monthly credit in residential operations</td>
<td>• Price discounts (specials) are favoured with some using print media (advertisements, flyers and posters) • An attractive display is also important</td>
<td>• Marketing corporate brand of one stop shopping using a wide range of mass media • Also run store level price and trail inducing promotions</td>
</tr>
<tr>
<td><strong>Target market</strong></td>
<td>• Uses a mass marketing approach with emphasis on low to lower middle affluence groups</td>
<td>• The mass market with emphasis on middle affluence areas</td>
<td>• Also mass marketing but with emphasis on middle to high affluence areas</td>
</tr>
</tbody>
</table>