

Growers' Perceptions Towards the Needs of Their Downstream Customers in the Western Australian Apple Supply Chain

Nawi, N. M.^{1*} and Batt, P. J.²

¹*Department of Agribusiness and Information Systems, Faculty of Agriculture, Universiti Putra Malaysia, 43400 UPM Serdang, Selangor, Malaysia*

²*School of Management, Curtin Business School, Curtin University, Bentley, WA 6102, Australia*

ABSTRACT

To succeed in an agribusiness, growers must understand what is required by their downstream customers. This paper explores the perceptions of apple growers in Western Australia towards the needs of their downstream customers. The results indicate that the most important factors that are perceived by growers to influence their downstream customer's choice of supplier are quality, price and continuity of supply. On the other hand, for downstream buyers, quality, price and a favourable long-term relationship were the most important factors that they used in selecting their preferred supplier. The growers' perception of their downstream customer's needs, and indeed, the criteria by which customers evaluate their alternative suppliers, are closely aligned. Both growers and downstream intermediaries identified quality and price as the major factors in selecting their preferred trading partners.

Keywords: Grower's perception, needs, downstream customers, quality, apple industry

INTRODUCTION

Apples are among the top horticultural products in Western Australia (WA), with production of 38,368 tonnes worth AUD28.4 million in 2003 (HAL, 2004).

Fruit is mainly cultivated in the WA regions of Donnybrook, Dwellingup, Manjimup and the Perth Hills. The period of February- May is the harvesting season for apples in WA. The harvested fruit is either sent to local markets for consumption and processing or to export markets. Apple exports from WA are significant, with more than 26% of production exported in 2003. However, phytosanitary regulations restrict the import of apples into the states (Douglas, 1995); The ideal climatic conditions in WA support

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E-mail addresses:

nolila@upm.edu.my (Nawi, N. M.)

P.Batt@curtin.edu.au (Batt, P. J.)

* Corresponding author

the production of good quality apples. However, Australian produce is not price competitive compared with apples from countries like China, Chile, New Zealand and South Africa. This constrains Australia's share of major export markets like Malaysia and Singapore. This is visible from the decline in export volume from 5,604 tonnes in 2003 to 2,606 tonnes in 2004. At the same time, there was a surge in the availability of apples in the domestic market. As the consumption of apples had declined from 16.0 kg/capita in 2000-2001 to 13.3 kg/capita in 2001-2002 (HAL, 2004), domestic wholesale prices have fallen.

Furthermore, changes in the distribution channels and falling returns are affecting the viability of small orchards, increasing pressure for economic performance and leading to a reduced number of fruit producers (Agricultural Forestry Fisheries, 2001). The establishment of modern retail formats like supermarkets and the reduction in local buyers are forcing fruit producers to yield to the coercive market power of available buyers. In traditional supply chains, apple producers believe that market intermediaries take advantage of their poor bargaining power on account of the absence of an effective control mechanism for price regulation (HAL, 2001). Many apple growers believe that direct transactions with retail buyers could increase their net profit. Kohls and Uhl (2002) proved this insight to be incorrect by demonstrating that alternative marketing arrangements lead to increased costs for producers, which can be avoided in the traditional system.

Moreover, the fresh produce marketing system requires various factors like quality, variety, prices, profits and cost of production to be considered before changing to a new distribution system.

Changes in the fruit distribution channel to retail formats like supermarkets gives apple growers the freedom to select their downstream trading partners. A greater understanding of the functions market intermediaries perform in the supply chain will also help growers to adapt their product to meet the downstream customer's needs. Even though most growers perceive that they can achieve greater profits by bypassing market intermediaries, there are certain market functions that need to be performed. In the fresh produce industry, quality is an extremely important factor that influences competitiveness. Product quality influences the consumer's choice relative to other competing products (such as other fruits, snack products and confectionery) (HAL, 2001). Furthermore, the characteristics of fresh produce often increase transaction costs and risks due to the fact that: (1) fresh produce is perishable and sensitive to post harvest handling; (2) fresh produce it often takes some time for any damage to be become apparant, making it difficult to identify the responsible parties; (3) it is difficult to measure the quality sought in the fresh market; and (4) quality specifications often differ from customer to customer. By identifying what customers need, growers can reduce the amount of conflict in their transactions and elevate their status to preferred suppliers.

This paper aims to investigate the perceptions of WA apple growers towards their downstream customers' needs and to further identify the extent to which the criteria used by downstream customers in supplier selection matches with the growers' perceptions.

LITERATURE REVIEW

Potential supplier evaluation by organisational buyers focus on quality, price and the ability to deliver (Dempsey, 1978; Wilson, 1994; Batt, 2003). Quality, ability to deliver and competitive price are deemed the important variables for evaluation, in that order (Weber *et al.*, 1991). The existence and maintenance of competitive advantage mainly depends on product quality (Rapert *et al.*, 1998). Nonetheless, product quality is a rather vague notion that has been extensively studied (Oakland, 1999). Quality assessment differs with the type of standard used for measurement. It is essentially measured using objective standards, but can also be gauged based on subjective standards. This entertains the notion that the buyers and users perception of product quality could vary. The possible change in the 'objective' product quality during distribution further complicates quality assessment.

In fresh fruit marketing, two types of quality are important to customers, namely technical and functional quality. Technical quality is related to what the customer gets from the production process. This determines the level of customer satisfaction with the quality offered for sale (Gronroos,

1995). Functional quality is related to the interaction process that determines the ongoing relationship with customers. This basically means suppliers must be able to deliver based on what the customer needs i.e. they must be able to deliver the product when the customer wants it. The quality of fresh produce can also be assessed on the basis of intrinsic and extrinsic quality attributes. Intrinsic quality is related to the physical attributes of the product, while extrinsic quality is related to the brand, the package, the place of purchase and the price (Batt, 2007). Post-purchase quality is assessed through experiential quality attributes that include taste, texture and flavour (Harker, 2001). As suggested by Batt and Sadler (1999) the intrinsic and extrinsic quality attributes that are most often used by consumers to select fresh fruit from a retail store are poor indicators of experiential (eating) quality.

Perceived value is expressed monetarily, in terms of the perceived product quality and its comparative price offer (Fornell *et al.*, 1996). Value is attained from the most cost-effective completion of an activity. In this case, the concept of value establishes the price that equalises the overall costs of functionality and benefits from selection of one particular product over others (Hutt & Speh, 2000).

The importance of positive long-term relationships and their impact on the effectiveness and efficiency of marketing channels have been better understood over the last decade and a half. Emphasis has been given to the creation of value

through relationships along with technical and functional quality aspects (Ravald & Gronroos, 1996). This has resulted in the establishment of long-term relationships with preferred buyers who are capable of meeting the supplier's expectations. Thus, the traditional ways of conducting business has progressively given way to long-term supply contracts (Kurnia & Johnston, 2001). The transition from transactional exchange to relational exchange is facilitated by numerous repeat transactions that build satisfaction and trust and lead to customer loyalty (Christopher *et al.*, 1991). As Gronroos (1995) indicated, the goal of relational marketing is to attract customers and retain them. According to Gronroos (1994), relational marketing strategy differs substantially with regards to market orientation, quality criteria, information on customers, functional interdependency and responsibility. Critical factors responsible for successful relational exchange include trust, good selection of suppliers and buyers, good performance by suppliers and buyers (in terms of logistics and flexibility), reliability, a balance of power, communication and competency (Peterson *et al.*, 2000).

With the increase in the number of modern retail formats and a growing need for consistent product quality, reliable delivery and food safety, more retailers are choosing to transact directly with growers as a means of reducing costs and improving product quality (Batt, 2006). In selecting the right supplier, Ellram (1990) explored supplier selection by the customers using

both hard and soft criteria. Hard criteria included price, quality, delivery and service, while the soft criteria included those that were hard to quantify like compatibility and the strategic direction that the supplier was taking in terms of building long-term relationships with buyers. In the case of customer selection criteria, rational economic theory suggests that growers will select customers who offer the highest price. Nonetheless, other criteria like prompt payment, packaging, delivery and support for promotion could also influence growers in their selection of customers (Batt, 2003). Increasingly, consumers want to know that their food is safe, where it comes from, how it was produced and who handled it (Batt, 2007). Proof of chain is becoming a key requirement, especially with regards to the various credence attributes such as how the product was produced, the means by which it was produced and what steps the growers, wholesalers and retailers have taken to minimise the environmental and social impacts of production on the community and society at large.

METHODOLOGY

The sampling frame for this study consisted of apple growers and market intermediaries in Western Australia (WA). A detailed questionnaire was prepared for each group to investigate growers' perceptions towards the needs of their downstream customers. A list of apple and pear growers was obtained from the WA Fruit Growers Association (WAFGA). Email was the selected medium for the initial survey of the 278 growers.

Within a period of two months, only 12 usable questionnaires were returned. After this, face-to-face interviews were conducted with the growers using a snowball technique, with the help of district associations and branches. In total, 50 apple growers were interviewed for this study.

The downstream customers included fruit packers, market agents, secondary wholesalers, supermarkets, other retailers and fruit exporters. At the time, 24 market agents operated in the Perth Metropolitan Market, of which 12 dealt with apples. In this study only six market agents and eight fruit packers participated. Secondary wholesalers who purchase fruit for and on behalf of other retailers or institutional customers were identified through the Perth Metropolitan Market website. For the retailers, a random selection of retailers were contacted from the Perth Metropolitan Yellow Pages (2004).

Though an attempt was made to contact a representative from the three major retail chains in Western Australia, only two supermarkets were willing to participate in this study. The person responsible for the purchase of fruit for each retail chain represented them during the interviews. The number of fruit exporters in Western Australia is currently declining in the main export markets, Singapore and Malaysia, due to competition from China. For the fruit exporters, a list was obtained from the Perth Yellow Pages (2004) directory and one of the exporters who participated in the study also provided a list. For all downstream customers, their willingness to participate

was confirmed via telecom before face-to-face interviews with consenting parties. In total, 41 market intermediaries participated in this study.

In this study, descriptive statistics were used to analyse general information on the activities related to apple marketing. To examine any significant differences in the growers' perceptions of their customers' criteria in choosing alternative growers in the Western Australian apple industry, the independent sample *t*-test was used. To compare what each downstream customer got from their preferred supplier, ANOVA was used.

FINDINGS

Growers believed that the critical factors which influenced their downstream customers' choice of supplier were quality (72%) followed by price (30%) and continuity of supply (14%). The least frequently cited variables by growers were past history or reputation (4%), a personal or business relationship (4%) and the right varieties (2%) (Table 1).

Besides the open-ended questions, growers were then asked to rate how important they believed each of the following were to their customers' in their decision to choose preferred suppliers. The first six criteria chosen by the growers indicated that quality was the most important criteria in the customers' selection of preferred suppliers (Table 2).

Price and the ability of the growers to store the fruit to ensure its freshness were also perceived to be important by

the growers. A wide range of fresh fruit and individual labelling were the two least important criteria identified by growers. Besides looking at what growers thought was important in their customer's decision to purchase apples from them, growers were asked to self-evaluate the criteria that stopped or prevented them from meeting their perceived market intermediary's needs (Table 3).

For growers transacting with fruit packers (FP), the inability to supply a sufficient quantity of fruit was perceived to be the major impediment. Seasonal variations, for apples are biennial bearing, impacted on both the quantity of fruit available and the size of the fruit. For the market agents (MA), the inability of the growers to supply sufficient quantities of fruit was once again cited as the major impediment. Furthermore, growers cited problems in producing apples at prices the market agents wanted to pay. High

costs impacted directly on the grower's profitability. With only small volumes of fruit available, growers were unable to respond to the market agent's request. Things that prevented growers from meeting the secondary wholesalers (W/S) needs included size, seasonal variations and the ability of the growers to pack the apples for them. As secondary wholesalers normally supplied fruit to restaurants or institutional organisations like hospitals, they normally required a certain size or variety for their customers.

For supermarkets (SM), size was the main thing that stopped growers from meeting the supermarket's needs. As supermarkets normally have their own specifications, it was hard for growers to fulfil the supermarkets' needs in terms of the size required because growers had to sell all of their fruit. For the retailers (R), price and quality were indicated by the growers as the main things that stopped them from

TABLE 1
Criteria Growers Think Important in Their Customer's Decision to Purchase Apples from Them

Response	Frequency	Percent (%)
Quality	36	72
Price	15	30
Continuity of supply	7	14
Presentation	4	8
Consistency	3	6
Enough fruit	3	6
Past history	2	4
Personal/business relationships	2	4
Right varieties	1	2

n = 50

TABLE 2
Growers' Perception of Their Customers' Criteria in Choosing Alternative Growers

Factors	Mean	SD
Free of physical injury	5.60	1.030
Delivering good quality apples	5.52	0.909
Free of pests and disease	5.48	0.931
Free of chemical residues	5.38	1.048
Right maturity	5.36	0.921
Good looking	5.28	1.213
Competitively priced	5.14	1.088
Store well	5.12	1.350
Desired variety	5.04	1.212
Deliver apples when required	5.02	1.204
Meet their immediate needs	4.92	1.104
Quantities required	4.86	1.340
Desired size(s)	4.80	1.161
Quality assurance programme	4.72	1.666
Well graded	4.36	1.893
Appropriately packed	4.36	1.893
Give credit (deferred payment)	4.04	1.384
Wide range of fresh fruits	3.74	1.712
Individually labelled	3.30	1.799

n = 50

Note: '1 – Not at all well', '6- Very well'

TABLE 3
Things that Prevented or Stopped Growers from Meeting Downstream Customers' Needs

CriCriteria	Frequency					
	FP	MA	W/S	SM	R	FE
Size	2	1	6	1		3
Can pack on our own	1	2	2			4
Seasonal variation	2	1	4			3
Able to supply quantity	3	6			2	
Price		1			3	
Other outlets		1				
Unable to work on short notice		3				
Cost		3			2	
Quality					3	
Time					1	
N	6	10	6	1	6	5

meeting the retailer's needs. Small green grocers were perceived as requiring fruit that was competitively priced while at the same time offering superior quality to their end customers. The ability of the growers to pack the fruit themselves was the main thing that stopped them from meeting fruit exporters' (FE) needs. This is because small scale growers who sell to fruit exporters generally do not have packaging facilities. Besides that, size and variety specified by fruit exporters were also identified by the growers as a major impediment.

To confirm growers' perceptions of the needs of their downstream customers,

customers were also asked to list the criteria used in deciding from whom they would purchase fruit. Good quality fruit, competitive pricing and good relationships were the most commonly identified responses by fruit buyers (Table 4).

For the fruit packers, additional criteria included sufficient quantity, consistent supply, the supplier's reputation and the presence of a quality assurance system. A quality assurance system enables more fruits to be sold to downstream customers. Market agents generally prefer to do business only with their regular suppliers, taking into consideration their familiarity, reliability and

TABLE 4
Criteria Used by Each Downstream Customers in Deciding from Whom They Will Purchase the Produce

Criteria	Frequency					
	FP	MA	W/S	SM	R	FE
Quality	6	2	6	1	19	3
Good relationships	3	2	2		8	4
Price	3	2	4		15	3
Able to supply quantity	3	1		1		
Reputation	2	1	1		3	
Consistent supply/availability	1	1			3	
Regular supplier	1					
QA system	1	1				
Fruit safety	1					
Trust					1	1
Regular supplier		2	2		1	
Co-op during shortage		1				
Can give profit		1				
Good storage			1		2	
Service					4	
Presentation					2	
Fresh					2	
Our own apples					1	
Taste					1	
N	8	6	8	2	25	4

dependability. Secondary wholesalers and provedores also prefer to do business with their regular suppliers, while supermarkets were only concerned with product quality and quantity as the key criteria for supplier selection.

Retailers were the most demanding buyers for they expected superior service from a preferred supplier. Fruit should be fresh in appearance and quality, with good shelf life and great taste. Supporting the earlier findings of Korneliussen and Gronhaug (2003), retailers placed more importance on the technical quality of

the fruit than the functional quality. The fluctuation in product quality from grower to supplier stressed the need for establishing a positive relationship between the market players. A good relationship between market intermediaries and their upstream suppliers increased the probability of fruit quality meeting their perceived expectations.

To determine customer requirements from their favoured suppliers, further analysis was undertaken to determine the importance of 19 criteria involved in the customers' decision to purchase fruit (Table 5).

TABLE 5
Criteria Customers Used When Choosing Alternative Suppliers

Criteria	FP	MA	WS	SM	R	FE
	Mean	Mean	Mean	Mean	Mean	Mean
Free of pests and disease	6.00	5.83	5.88	6.00	5.88	3.75
Delivering good quality apples	5.88	5.50	6.00	5.00	5.96	5.25
Free of physical injury	5.88	4.50	6.00	5.50	5.92	4.50
Competitively priced	5.63	4.33	5.63	4.50	5.72	4.50
Free of chemical residue	5.62	5.67	5.63	5.50	5.76	4.50
Good looking	5.50	5.17	5.63	4.50	5.92	5.50
Deliver apples when required	5.38	5.83	5.88	5.50	5.92	4.75
Desired variety	5.38	5.17	5.50	5.50	5.76	4.25
Right maturity	5.25	5.50	5.88	5.50	5.96	4.25
Meet their immediate needs	5.25	4.50	6.00	3.50	5.72	4.75
Desired size(s)	5.00	5.33	5.13	5.50	5.28	3.25
Store well	4.88	5.67	6.00	4.50	5.92	4.25
Quantities required	4.88	5.17	5.25	5.00	5.68	4.25
Quality assurance programme	4.63	4.33	5.38	5.00	5.44	3.75
Well graded	3.75	6.00	5.38	5.00	5.36	5.75
Appropriately packed	3.50	5.67	4.63	5.00	4.44	5.50
Individually labelled	3.13	3.17	4.25	4.00	4.28	3.75
Give credit (deferred payment)	3.13	1.67	3.25	2.00	2.76	1.50
Wide range of fresh fruits	2.63	3.00	5.50	2.00	5.24	1.75
N	8	6	8	2	25	4

Note: '1 – Not at all important', '6- Very important'

Well graded and packed fruit was of little consequence to fruit packers, especially since these services were provided by them to small growers. Similarly, separately labelled fruit, deferred payment and a wide range of fresh fruit were of little importance to fruit packers with narrow product lines. The market agents preferred well graded, appropriately packed and not necessarily separately labelled fruit. A wide range of fresh fruit was not important for market agents and specialist wholesalers, unlike secondary wholesalers and provedores who expected a wide range of fresh fruit and vegetables from their suppliers. Again, deferred payment was the least important consideration.

The very small number of supermarket respondents in the study prevented a meaningful statistical analysis. On the whole, supermarkets expected delivery of fruit that met very specific quality and quantity parameters and was priced competitively. They were not concerned with any extension of credit or the range of fresh fruit offered by their suppliers. This points towards the selection of multiple suppliers by the supermarkets for fruit. Supermarkets yield much power in WA and thus the trading and payment terms of the supermarkets needs to be accepted by suppliers.

Small independent retailers were unconcerned with fruit labelling and packing. This is due to the ownership status of the business. Such businesses are family run with trained staff capable

of differentiating between varieties. They also show more readiness towards the use of returnable plastic crates. Fruit exporters identified a wide range of fresh fruit and the need to accept an extension of credit as the two least important criteria in their decision to buy from alternative fruit suppliers.

CONCLUSION

Generally, growers perceived things differently from their downstream buyers. While downstream buyers normally look at the quality of the produce, growers were more concerned about the price received from their preferred buyers. The results of the study indicated that most of the growers wanted a high price or the best returns from their transactions with their downstream buyers. However, at the same time, growers wanted to establish a long- term relationship as a means of reducing the risk and uncertainty associated with the exchange. Thus, both economic and relational variables were found to be important criteria in the exchange process between growers and their preferred downstream buyers.

In terms of the downstream buyers' needs, most of the buyers indicated that they wanted good quality produce at a competitive price. At the same time, they wanted to have a good relationship with their preferred suppliers. For most buyers, quality was the main criteria when choosing preferred suppliers because their end customers would usually go for quality products. Most growers were able to meet

their downstream market intermediaries' needs in terms of quality and price except for the size of the apple.

The growers perception of their downstream customers' needs, and indeed, the criteria by which customers evaluate alternative suppliers, were closely aligned. Both parties identified quality and price as important factors in the selection process of trading partners by downstream market intermediaries. As growers and downstream buyers have similar perceptions, there will be few problems in the future and thus, there is little to stop them from continuing to transact in the future.

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