Factors considered by fruit consumers through group-buying channels in Taiwan

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ABSTRACT

Along with the socialization of the information network and the multiplication of transportation and marketing in Taiwan, fruit farmers not only trade their fruits and vegetables in the wholesale market but also have started to access the internet for sales promotion. They voluntarily auction and establish blogs to attract potential customers so as to cause a vigorous upswing in group-buying behaviour. This paper focuses on the group-buying customers who have bought domestic fruits. The researchers employed secondary data to establish the list of domestic fruit farmers who marketed their products to group-buying customers; and then used on-the-spot investigation, in-depth interviews and the questionnaire surveys of group-buying customers of fruit. The questionnaires were given to the group-buying customers from northern, central, southern, and eastern parts of Taiwan from June 1 to November 30, 2009. Of the 1,200 customers sampled by random draws without adjustment, only 718 (59.83%) were used in this paper. The fruit quality in group-buying and the degrees of satisfaction from customers are analyzed by the Kano model. Group-buying purchasers can take advantage from purchasing fruit at lower prices and receiving the fruit directly by mail. Farmers can reduce the cost for recruiting customers, as well as transaction costs because they do not need to sell the products through complicated channels. This paper should inform strategy formulation by growers seeking to sell to consumer groups; thereby using resources more efficiently, providing services to the customers that satisfy their expectations, and creating competitive advantage.

1. Introduction

Taiwan, known as "the fruit kingdom," is located in the subtropics, where many kinds of fruits grow in all seasons. According to the annual report of the Agricultural Statistics of Council of Agriculture (COA) in 2008 (Council of Agriculture, 2009), the total agricultural values grew from 1.52 trillion NT$ in 2002 to 1.83 trillion in 2006. As a result of this upsurge, the percentage of fruits in total agricultural output value reached 39.8%. The primary reason for this growth trend was Taiwan's joining of the World Trade Organization (WTO). The agricultural products imported and exported gradually opened up. Domestic fruits have the strength of freshness and are not affected by other imported products. In addition, fruit products benefit from government technical supported through the District Agricultural Research and Extension Stations and Agricultural Research Institutes to plant and cultivate new cultivars, which improve the

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competitivity through enhanced appearance and flavor.

Nonetheless, the fruit is of uneven quality and not easy to store. Hui (1997) pointed out that the traditional domestic fruit marketing channels are from the places of origin to wholesalers, farmers' associations, cooperative associations to request sells. The fruit and vegetable wholesalers sell by tenders, and then through the service wholesalers and retailers to sell to customers, who increase the cost of supply chain and decrease the income for the farmers. These multiple stages affect the willingness to plant, and needlessly complicate the marketing channels. In order to increase farmer income and reduce the cut by wholesalers and retailers in the real prices given back to farmers, the "Direct Marketing Channel" model germinated in 1980. Under this paradigm, farmer associations and cooperative associations collect the fruit directly, transport it to allocation centers or packing and processing stations perform grading and packing, and deliver the fruit to the customers. Obviously, farmer associations, retailers, wholesale businesses, and wholesale markets play very important roles in the fruits and vegetables transportation and sale circuit.

However, retailing has changed since the 1980s. Large-scale wholesalers and chain-like supermarkets have gradually appeared, and customers have clustered into large consumer categories for non-staple food such as the military, hospitals, the housewife alliance, and so on. Because retailing has changed, so has the structure of marketing channels. Households have begun to purchase products directly from the origin without going through wholesale traders. This trend has not only decreased the costs of marketing channels but has also enabled growers to enjoy more reasonable profits. Chen (1997) points out that the key point to direct marketing is to obtain the customers' approval. Therefore, brands must be established; cooperation between the farmer association and the big

expense households enhanced; the quality of distribution and selling centers upgraded; and freshness of the product improved and strengthened.

Along with the socialization of the information network and the multiplication of transportation and marketing in Taiwan, fruit farmers not only trade their fruits and vegetables in the wholesale market but also have started to access the internet for sales promotion. This has spurred an upswing in group buying. At present, group-buying customers comprise companies, associations, people who live in apartments and houses, and housewife alliances. Customers can receive their fruits directly by mail from the origin. Therefore, it is urgent to draw up a detailed strategy for the further development of the marketing channels for domestic fruit. This paper will be the basis for group-buying customers to make decisions, to use resources efficiently, to provide customer service to satisfy customer needs, and to create competitive advantages.

2. Literature Review and Analytic Method

2.1 Group-buying

Group-buying involves aggregating consumers' demands to make the price of products increase or decrease through the volume-discount model. The two main elements are "demand aggregation" and "volume discounting" (Anand and Aron, 2003). The usua process of group-buying involves forming a coalition or group with the same need for the product or service to negotiate the price with the company, ask for a discount for the products, or provide other financial interest such as gifts (Li *et al.* 2004; Yuan and Lin, 2004). The more people involved in group-buying, the greater the bargaining power (Yuan and Lin, 2004).

The group-buying model reposes on two basic principles. First, for manufactures, the cost of promoting to one customer is lower than that of promoting

to many customers. Therefore, if customers gather together to purchase a large amount of products with increased sales volume, manufacturers will be willing to sell at lower prices to the customers. Second, for the customers, when the prices go down, they are more willing to buy products or services (Anand and Aron, 2003; Yuan and Lin, 2004).

Buyers under group-buying strengthen their bargaining power and purchase products at lower prices. As the number of transactions and the size orders increase, products prices will continue to decline. Buyers can buy the goods at wholesale prices, and sellers can reduce the costs of recruiting customers. Both buyers and sellers can reduce their transaction costs. Therefore, group-buying is a beneficial business model for both buyers and sellers (Dodge, 1999; Lai, 2002).

The group-buying process will involve with three parts:

(1) *Demand aggregation:* demand aggregation is a process whereby a group who has the same need for the product and service gathers together to purchase a large amount (Anand and Aron, 2003; Goldfarb and Stevenson, 1999). The motivation of the demand aggregation is to have more discount or financial interest from the manufacturers. In addition, customers gather benefits from forming the coalition and increase countervailing power against the manufacturer. (Li *et al.,* 2004; Rha and Widdows, 2002). In the past, aggregating demand was limited by geographical constraints. However, the internet breaks the previous restrictions and prompts the customers to form alliance to bargain with manufacturers (Goldfarb and Stevenson, 1999).

Bargaining: a bargain is an agreement between the manufacturers and customers; the customers request to provide price discounts, gifts, or service (Lee, 2000). If the demand of the aggregating amount increases or more customers participate in group-buying, their bargaining power will be higher (Yuan and Lin, 2004). Even though the purpose of bargaining is to gain financial interest, the process of bargaining also requires the investment of more time and mental effort, which might cause monetary and/or psychological loss to the customers. This loss from the process of bargaining between the manufacturers and customers is called bargaining costs (Zwick and Weg, 2000).

(2) *Volume discounting:* under the volume discount the manufacturers, based on the amount of need from the customers, provide a discounted price. When the customers have higher demands for the products, the manufacturers are willing to offer higher discounts to the customers. Such discounting can help the manufacturer to attract more customers to accelerate the sales of products or services (Anand and Aron, 2003; Fowler, 2002; Li et al., 2002).

2.2 Analytic Method-Kano Model

The Kano model was introduced by Noriaki Kano and Fumio Takahashi in 1979. They applied Herzberg's Motivator-Hygiene (M-H) Theory to the quality management, which they termed "Quality of M-H". In 1981, Kano considered that "the quality of MH" was rigid and difficult to specify. Therefore, he integrated previous research to coin the concepts of "an attractive quality and must-be quality" and empirically tested the new Kano model with Turgeon Normand, Fumio Takahashi, and Shinichi Tsuji in 1984. The Kano Model survey questionnaire employed a "TV" and a "Decorative clock" to improve the quality of existing products through the customers' point of view. As predicted by their theory, they found that a uni-dimensional concept of quality was hard to control; instead, one needed to measure the customers' true needs by using the Kano paradigm.

Kano determined that the spending concept for consumers was not one- but two-dimensional. If a customer bought a pen today, and the ink did not flow smoothly, he or she was not satisfied.

However, if the pen was used well and the ink flowed smoothly, the customer would not increase his satisfaction of this pen.

Kano elaborated the the quality attribute from this phenomenon (Figure 1).

Figure 1: The Kano model
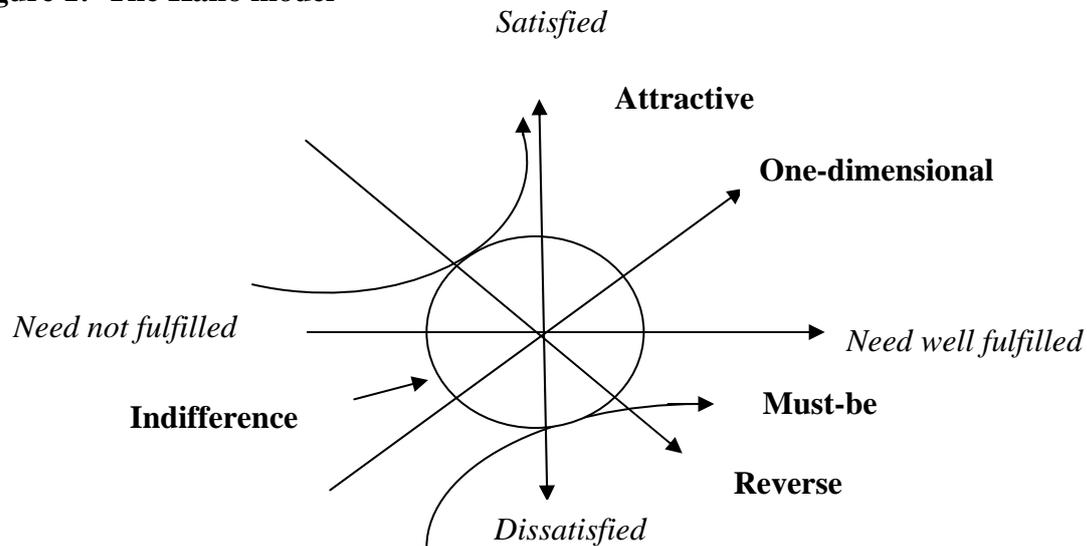
The quality element in the Kano model is followed by Quality Function Development, QFD. Kano used the horizontal axis in Figure 1 to present the quality of need fulfilment; the more to the right, the higher level and the more to the left, thegreater degree of lack. Using the vertical axis to present the customers' satisfaction, Kano positioned upward movement higher satisfaction and vice versa. Using the relationship between the horizontal and vertical axis Kano distinguished five distinct categories of quality, shown in bold characters in Figure 1. Figure 2-1 Kano model

（1）Must-be Quality

Having this element would not affect the customers' satisfaction; however, once the element is absent, it causes instantaneous dissatisfaction. Kano calls the quality element as "Expected Quality" because this element has been expected by the consumer previously and regarded as the basic characteristics of the product or service. In Figure 1, regardless of the number of quality elements, the curve will not exceed the horizontal axis, but once it is in short supply, it will cause considerable customer dissatisfaction.

（2）One-dimensional Quality

When the element is provided more adequately, customers are more satisfied, and vice versa. The relationship between the customers' satisfaction and the element is one-dimensional (Emery and Tian, 2002).

（3）Attractive Quality

When the element exists, the customers are very satisfied; on the other hand, once the element does not exist, it will not cause dissatisfaction. In Figure 1, the curve going up represents the attractive quality element. Once the attractive quality element is present, even only a small amount, customer satisfaction shoots up. The attractive quality must act as a pleasant surprise under circumstances that customers do not expect.

（4）Indifferent Quality

To have or not to have the quality element will not affect the customers' satisfaction or dissatisfaction.

（5）Reverse Quality

To have this quality element will lead to customer dissatisfaction, but not having this quality element does not make customers more satisfied.

According to this classification of Kano quality attributes, the questionnaire includes both positive and negative statements about each attribute, and then follows the matrix to determine which types of Kano quality attributes are present or absent. Crossing positive and negative statements method is the surest way to determine customers' feelings and satisfactions in having or not having quality attributes. The classification of quality attributes is not done *a priori* but is determined endogenously from the responses from of the customers. This paper contains questions from the quality classification matrix, as proposed by Matzler and Hinterhuber in1996. The questions are as following:

1. Positive questions: how do you feel when the quality attributes in the questions are available or adequate? Please select an answer from the following items that are the same with your feelings.

(1) Satisfaction (2) Must-be (3) No feel (4) Can tolerate (5) Not satisfied

2. Negative question: how do you feel when the quality attributes in the questions are not available or not adequate? Please select an answer from the following items that are the same with your feelings.

(1) Satisfaction (2) Must-be (3) No feel (4) Can tolerate (5)Not satisfied

Based on the matrix of Matzler and Hinterhuber, this paper also divided quality attributes into six types: invalid quality, reverse quality, attractive quality, one-dimensional quality, must-be quality, and indifferent quality. This classification method makes it is easy for the public to understand the characteristics of the service quality attributes and express the meaning shown in Table 1.

Table 1: Matzler and Hinterhuber two-dimensional quality classification matrix

		Reverse-Side Statement				
		Like	**Must-be**	**No feel**	**Can tolerate**	**Dislike**
Positive-Side Statement	**Like**	No Effect	Attractive Quality	Attractive Quality	Attractive Quality	Must-be Quality
	Must-be	Reverse Quality	No Interest-Indifference Quality	No Interest-Indifference Quality	No Interest-Indifference Quality	Reverse Quality
	No feel	Reverse Quality	No Interest-Indifference Quality	No Interest-Indifference Quality	No Interest-Indifference Quality	Reverse Quality
	Can tolerate	Reverse Quality	No Interest-Indifference Quality	No Interest-Indifference Quality	No Interest-Indifference Quality	No Effect
	Dislike	Reverse Quality	Reverse Quality	Reverse Quality	Reverse Quality	No Effect

For example, when the positive questions are selected in "satisfaction," but negative questions are "no feel" and compare with the quality classification matrix introduced by Matzler and Hinterhuber in 1996, will get the attractive quality attribute. Other attractions in classification will do in this method.

Different customers have different requests for quality elements different property classifcations; therefore, it would be blurring and difficult to determine. In general, the classification method is to classify "most significant" statistically.

When the quality attributes cannot be classified or are similar and difficult to distinguish, Matzler and Hinterhuber indicated that the precedence should be: must-be quality> one-dimensional> attractive quality> no interest-indifference quality.

Matzler and Hinterhuber developed quality improvement index by Kano model shows as relations (1) and (2):

Increase the satisfaction index＝

$$(A+O) / (A+O+M+I) \qquad (1)$$

Reduce the dissatisfaction index＝

$$（O＋M）/（A＋O＋M＋I）（-1）(2)$$

A: Attractive attributes; O: One-dimensional attributes; M: Must-be attributes; I: No Interest-Indifferent quality attributes. Calculated by the percentage of attractive Quality (A) and one-dimensional (O) and the total of one-dimensional (O) and must-be quality (M) and then divided the sum of four-quality ratio (attractive quality, one-dimensional quality, must-be quality, No Interest-Indifferent quality) (A + O + M + I).

By this analysis, the paper can analyze how to improve the elements of qualities, how much need to increase or reduce the satisfaction for the service in next step. Increasing the satisfaction index closer to 1, having more elements in quality is easy to improve customer satisfaction; otherwise, reducing satisfaction index close to -1, not having the elements at the time, the customer satisfaction will decrease easily. Kano Model stated the quality of the different elements clearly; quality classification in elements can identify the customers' demands easily.

In summary, the Kano model helps to understand the real customers' needs and apply in quality management. From the customer's points of view, the researchers understand the characteristics of different quality of service to classify quality of service and the usages in strategies. Therefore, the questionnaire was designed by the Kano Mode in this paper and gave the group-buying customers to do the survey. Based on the results, understanding the customers' needs to improve the quality of service in group-buying and providing the service quality that group-buying groups ask for to improve the customers' satisfaction and loyalty.

3. Research Framework

3.1 Research framework

As in Figure 2, the paper interviewed the fruit farmers who already have group-buying customers to understand how the domestic fruit farmers do the marketing to the group-buying groups to find the suitable factors for this study. Using Kano Model to design questionnaires and concluding the domestic fruit quality attributes after survey. To analyze the domestic fruit to improve the indicating points for the group-buying customers in order to provide the decision-making for the fruit farmers. To use the resource effectively and provide the services to the consumers that they needs to satisfy the customers' expectations and create the competitive advantages.

3.2 Sampling design and questionnaire survey

This paper focused on the group-buying customers who bought the domestic fruits before and using the secondary data to get the list of the domestic fruit farmers who marketed their products to group-buying customers. The questionnaires were attached to the group-buying customers from northern, central, southern, and eastern parts of Taiwan from June 1, 2009 to November 30, 2009. 1,200 samples were sampling by randomly without adjustment. Only 718, 59.83% were used in this paper.

Besides personal information, the Kano model was used to design a closed-response questionnaire that included three parts: (1) Personal information, including gender, age, education, and living areas. (2) Two-dimensional model in group-buying domestic fruit. Researchers interviewed the fruit farmers who have already had group-buying customers to know what the domestic fruit farmers market their products and based on the secondary data to find out 26 factors. Designing both sides of questionnaires to customers to do and analyzed the information after collecting the questionnaires. (3) Analyzing the group-buying customers' experiences including the numbers of group-buying, buying purposed, group-customers' belongings,

and their satisfaction to know the group-buying customers' consumptions patterns.

Figure 2: Research Framework
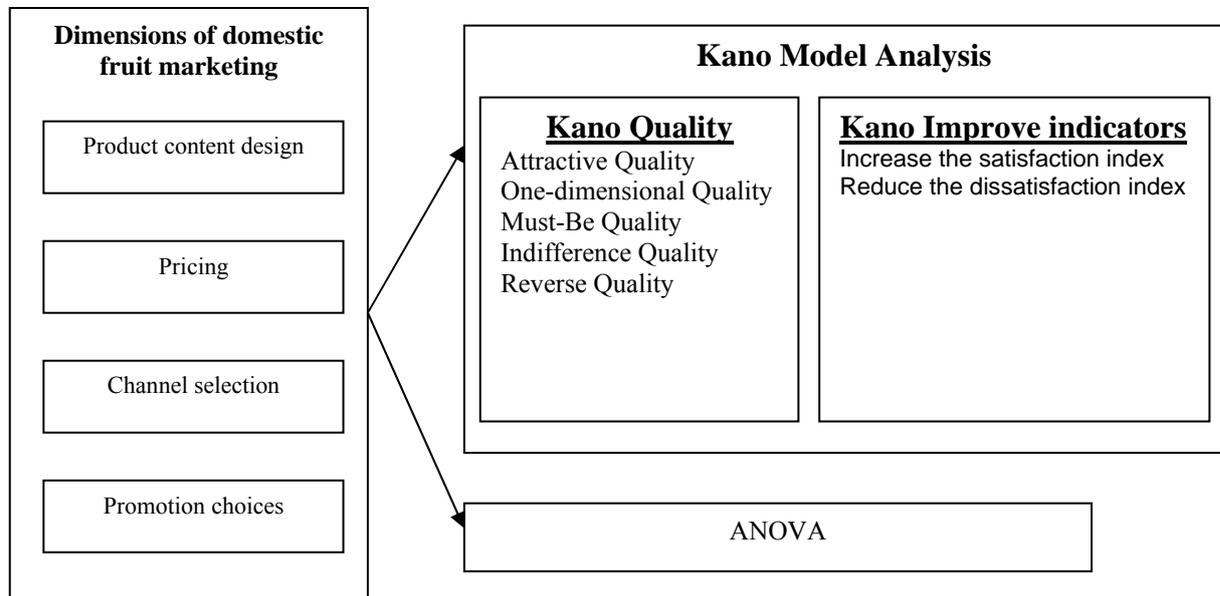
4. Empirical Results and Analysis

4.1 Basic characteristics of samples

Based on the results, some features of samples surveyed are follows:

1. Distribution of residence: according to the result, the residents live in the northern, central, southern and eastern regions of Taiwan; 718 questionnaires are used in this research.

2. Gender Analysis: group-buying in the proportion of women, 62.3%, is higher than men, 37.7%.

3. Age: most of the group-buying customers are in the ages from 26 to 35, 40.1% and then from 36 to 45, 29.4%.

4. Education analysis: about 72.3% of the customers have college degrees, and 17.1% of customers have high school degrees.

5. The frequency of buying domestic fruit for the group-buying customers every year: up to 84.6% of the interviewees bought domestic fruit 1-3 times, follow by 8.9% 4-6 times, only 5.8% of interviewees bought domestic fruit 10 (or more) times.

6. Consumption groups: 48.9% customers belong to companies, follow by family and friends together with 38.9%.

7. Purchasing reasons: the major reasons for customers to buy the domestic fruit are cheap, 21.9%, and high quality, 20.1%. Next is relatives and friends introduced, 16.1%, saving purchasing time, 14.3%, and convenience, 14.3%.

8. Information source: most of the customers got the information source from their relatives and friends, 36.9% and followed by farmers' self-promotion activities, 26.7%.

4.2 Reliability

The questionnaire survey in this research is divided into two parts. First is the consumers' basic information. Second is to investigate in overall domestic fruit quality characteristics from consumers. Using Cronbach's α coefficient to exanimate the interior consistence, the Cronbach's α coefficient, 0.8725 in this paper, is the reliability, which indicated

that the questionnaire was designed consistently and was good reliability.

4.3 The results of analyzing fruit quality characteristics in group-buying by using Kano Model

1. The results of Kano quality classification

The Kano Model in this paper was used to classify the group-buying consumers for buying the domestic fruit quality; using the way of "relative majority" to classify the questions. 26 quality questions are belonging to its quality characteristics, see Table 4-1:

(1) Must-be Quality: The customers think that the fresh, the payment methods, ordering products by phone or by Internet, using the media advertisement, advertisement and using the network to promote the products is "Must-be Quality".

(2) One-dimensional Quality: One-dimensional quality is the fruit quality in group-buying should be stable, the rank of excellent, showing indication completely, the price is lower than the market price, the hierarchy cost, homegrown, and Word of mouth marketing.

(3) Attractive Quality: The group-buying customers have formed in variable ways, and the attractive quality includes the customer service with hotline, credit card payment, cash on delivery, and delivery service within 24 hours after paying.

(4) No interest-indifference quality:

Package products with various combinations, convenience store pick up service, self pick up service, retail service, and exhibition with the agricultural authorities to promote the products are no interest-indifference quality.

(5) The consumer buys fruit regarding the group the beautifully packaged, the convenience store to take the goods, to take the goods, the retail sales service, the coordinate agriculture politics unit to hold the demonstration voluntarily to promote the product, is the non-difference quality.

2. Kano Model quality improvement indicators

By combining relations [1] and [2], the paper revealed some quality improvement indicators. Increasing the satisfaction indicator: when the satisfaction indicator increase and closes to 1, it increases the customers' satisfactions easily. Using word of mouth to promote products, delivery service within 24 hours after payment, cash on delivery, and self-production and marketing to promote products would increase customers' satisfaction.

When one eliminates the dissatisfaction indicator closest to − 1, it decreases the customers' service easily. If fruit quality is unstable, the freshness of the products, the excellence rank, or ordering by phone would reduce the customers' satisfaction in group-buying.

Table 2: Kano Model analysis resulted in fruit quality characteristics

The fruit quality characteristics in group-buying	Must-be quality	One-dimensional quality	Attractive quality	No interest-indifference quality	Reverse quality	No effect	Increase satisfaction index	Delete dissatisfaction index
The stability in product quality	39.6%	47.5%	3.0%	6.1%	0.9%	2.8%	0.53	-0.90
The range of excellent in product	33.7%	50.6%	4.4%	7.3%	0.9%	3.0%	0.57	-0.87
Package	13.3%	19.4%	22.7%	35.4%	3.3%	5.9%	0.46	-0.35
Products with various combinations	12.4%	22.2%	30.0%	27.6%	3.0%	4.7%	0.57	-0.36
Product marking completion	29.5%	41.5%	10.1%	16.2%	0.7%	2.1%	0.53	-0.72
Product freshness	34.0%	55.3%	3.3%	5.4%	0.7%	1.4%	0.60	-0.90
Products advisory services	27.2%	31.1%	13.8%	23.4%	0.7%	3.7%	0.47	-0.61
Customer service with hotline	26.7%	12.6%	34.0%	23.0%	0.9%	2.8%	0.48	-0.40
Fruit prices in group-buying is lower than market price	20.6%	37.2%	19.4%	18.3%	0.9%	3.5%	0.59	-0.60
Full capacity with free shipping	19.7%	39.1%	19.4%	16.6%	0.5%	4.7%	0.62	-0.62
Tiered pricing system	21.8%	26.7%	15.9%	26.5%	2.1%	7.0%	0.47	-0.52
Credit card payment	2.6%	13.8%	47.1%	34.0%	2.1%	0.5%	0.63	-0.16
Bank transfer payment	50.1%	3.5%	11.0%	30.7%	3.0%	1.6%	0.15	-0.55
Cash on delivery	4.0%	0.7%	63.5%	15.9%	15.5%	0.5%	0.76	-0.05
Delivery service within 24 hours after paying	1.4%	0.7%	63.7%	16.6%	16.6%	0.9%	0.78	-0.02
Convenience store pick up service	4.0%	3.5%	13.3%	54.1%	21.5%	3.5%	0.23	-0.08
Self pick up service	9.8%	10.1%	24.4%	36.1%	13.8%	5.9%	0.43	-0.21
Telephone ordering service	70.5%	4.7%	0.2%	11.2%	12.6%	0.7%	0.06	-0.76
Internet ordering service	63.0%	4.2%	0.2%	14.5%	17.1%	0.9%	0.05	-0.68
Retail services	4.4%	0.5%	20.4%	53.6%	21.1%	0.0%	0.26	-0.05
Exhibition with the agricultural authorities to promote their products	2.6%	0.7%	23.9%	48.7%	24.1%	0.0%	0.32	-0.03

Table 2: Kano Model analysis resulted in fruit quality characteristics (Continue)

The fruit quality characteristics in group-buying	Must-be quality	One-dimensional quality	Attractive quality	No interest-indifference quality	Reverse quality	No effect	Increase satisfaction index	Delete dissatisfaction index
Using media advertising (television, Internet, etc.) to promote products	44.3%	1.9%	35.4%	17.8%	0.5%	0.2%	0.38	-0.46
Using print ads (agriculture publications, DM, etc.) to promote products	44.5%	12.2%	25.5%	16.4%	0.9%	0.5%	0.38	-0.57
Using Internet marketing (BLOG, keyword, etc.) to promote products	46.8%	2.6%	32.3%	17.8%	0.0%	0.5%	0.35	-0.50
Self-production and marketing to promote products	4.4%	49.2%	24.6%	21.1%	0.7%	0.0%	0.74	-0.54
Using word of mouth to promote products	3.7%	53.6%	23.7%	16.9%	1.6%	0.5%	0.79	-0.58

4.4 The relevance of consumer basic information and quality element in group-buying

This paper used ANOVA analysis to identify and test the significance of the relationships between the customers' personal information from the group-buying customers and the quality from each factor. The personal information from the domestic fruit group-buying customers are the purchase times, the associations of the group-buying customers, gender, age, education, the living areas. Table 3 indicates that customers with different backgrounds of fruit group-buying have different feelings about fruit quality when they purchase.

4.5 Consumer satisfaction and repurchase intention in group-buying

The customers' satisfaction and repurchase intention survey and research to continuously improve the domestic fruit group-buying products and customer service quality are used in this paper. This approach should help not only to maintain the existing group-buying customers but

also attract potential customers in order to provide the new market channel for the domestic fruit.

1. The Relevance of overall customer satisfaction, repurchase intention, and quality element

In order to understand the satisfaction, repurchase intention, and quality elements in domestic fruit group-buying, one-way ANOVA is used in this paper. As shown in Table 4, besides fruit prices in group-buying is lower than market price, other significant benefits include: full capacity with free shipping, credit card payment, telephone ordering service, using media advertising (television, Internet, etc.) to promote products, using Internet marketing (BLOG, keyword, etc.) to promote products. Besides free delivery with the enrollment, 26 items positive quality elements and customers overall satisfactions, have shown the differences obviously. Besides package, customer service with hotline, credit card payment, cash on delivery, delivery service within 24 hours after paying, convenience store pick up service, self pick up service, retail

services, exhibition with the agricultural authorities to promote their products, using media advertising (television, Internet, etc.) to promote products, and using Internet marketing (BLOG, keyword, etc.) to promote products, Among the 26 items, positive quality elements and customers repurchase intention show huge differences.

Table 3: The test of the group-buying customers' personal information and the positive elements

The fruit quality characteristics in group-buying	Group-buying time	Group-buying belong	Gender	Age	Education	Residence
The stability in product quality	0.001	0.000	0.203	0.000	0.426	0.562
The range of excellent in product	0.000	0.004	0.359	0.001	0.263	0.231
Package	0.982	0.892	0.229	0.108	0.295	0.546
Products with various combinations	0.042	0.562	0.708	0.059	0.840	0.154
Product marking completion	0.095	0.001	0.923	0.112	0.123	0.623
Product freshness	0.001	0.000	0.346	0.000	0.539	0.487
Products advisory services	0.000	0.000	0.225	0.001	0.723	0.125
Customer service with hotline	0.814	0.989	0.463	0.052	0.723	0.598
Fruit prices in group-buying is lower than market price	0.892	0.056	0.235	0.452	0.143	0.478
Full capacity with free shipping	0.292	0.008	0.156	0.326	0.454	0.123
Tiered pricing system	0.002	0.003	0.425	0.084	0.262	0.258
Credit card payment	0.865	0.895	0.533	0.628	0.115	0.347
Bank transfer payment	0.001	0.000	0.674	0.000	0.220	0.135
Cash on delivery	0.055	0.232	0.105	0.023	0.451	0.365
Delivery service within 24 hours after paying	0.042	0.036	0.205	0.595	0.651	0.187
Convenience store pick up service	0.566	0.052	0.306	0.698	0.215	0.985
Self pick up service	0.345	0.067	0.169	0.667	0.564	0.318
Telephone ordering service	0.000	0.006	0.256	0.001	0.102	0.145
Internet ordering service	0.002	0.000	0.149	0.000	0.258	0.356
Retail services	0.489	0.236	0.135	0.185	0.379	0.265
Exhibition with the agricultural authorities to promote their products	0.098	0.154	0.254	0.081	0.457	0.458
Using media advertising (television, Internet, etc.) to promote products	0.092	0.068	0.265	0.021	0.103	0.658
Using print ads (Agriculture Publications, DM, etc.) to promote products	0.097	0.084	0.287	0.096	0.024	0.145
Using Internet Marketing (BLOG, keyword, etc.) to promote products	0.096	0.046	0.215	0.035	0.548	0.235
Self-production and marketing to promote products	0.000	0.000	0.315	0.001	0.125	0.985
Using word of mouth to promote products	0.001	0.006	0.451	0.003	0.123	0.134

Note: $0.05 \leqq P \leqq 0.1$, significant; $0.01 \leqq P \leqq 0.05$, very significant; $P < 0.01$, extremely significant

Table 4: The test of overall satisfaction, repurchase intention, and positive quality element in group-buying

The fruit quality characteristics in group-buying	Satisfaction	Repurchase intention	The fruit quality characteristics in group-buying	Satisfaction	Repurchase intention
The stability in product quality	0.000	0.000	Cash on Delivery	0.000	0.426
The range of excellent in product	0.009	0.004	Delivery service within 24 hours after paying	0.021	0.263
Package	0.012	0.892	Convenience store pick up service	0.108	0.295
Products with various combinations	0.046	0.061	Self pick up service	0.059	0.840
Product marking completion	0.015	0.009	Telephone ordering service	0.112	0.000
Product freshness	0.001	0.000	Internet ordering service	0.000	0.001
Products advisory services	0.000	0.000	Retail Services	0.001	0.723
Customer service with hotline	0.034	0.989	Exhibition with the agricultural authorities to promote their products	0.052	0.723
Fruit prices in group-buying is lower than market price	0.926	0.056	Using media advertising (television, Internet, etc.) to promote products	0.452	0.143
Full capacity with free shipping	0.283	0.008	Using print ads (agriculture publications, DM, etc.) to promote products	0.326	0.454
Tiered pricing system	0.006	0.082	Using Internet Marketing (BLOG, keyword, etc.) to promote products	0.084	0.262
Credit card payment	0. 265	0.895	Self-production and marketing to promote products	0.089	0.000
Bank transfer payment	0.001	0.000	Using word of mouth to promote products	0.000	0.001

Note: $0.05 \leqq P \leqq 0.1$, significant; $0.01 \leqq P \leqq 0.05$, very significant; $P < 0.01$, extremely significant.

2. The Relevance of overall customer satisfaction and repurchase intention

All in all, the average of customers' satisfaction in the domestic fruit group-

buying ranges from 3.00 to 4.83, and repurchase lies between 3.46 and 4.89. Table 5 shows that the correlation between overall customer satisfaction and the repurchase intention is 0.674, which signifies that these two factors are more than moderately related.

Table 5: The Relevance of overall customer satisfaction and repurchase intention

	Overall satisfaction	Repurchase intention
Overall satisfaction Pearson Correlation Sig. (2-tailed) N	1 . 718	0.674 0.00 718
Overall satisfaction Pearson Correlation Sig. (2-tailed) N	0.674 0.00 718	1 . 718

5. Conclusions and Suggestions

As for the buyers under group-buying, they gain enhanced bargaining power and lower prices without having to make individually massive purchases. On the other hand, the sellers can use the marketing strategy in group-buying to reduce the cost of recruiting customers. Therefore, group-buying reduces transaction costs for both buyers and sellers, and constitutes a mutually beneficial marketing strategy.

The people who were interviewed in this research are won over to the group-buying of fruits. Not only does group-buying improve the repurchasing and satisfaction from the customers but sales profits and volume also increase. The Kano model used in this paper leads to insights in domestic fruit group-buying and may be used to guide the marketing strategies of fruit farmers in the future.

1. The major group-buying consumers

A. As the results, due to the fruit characteristics and customers' spending habits in domestic fruit group-buying, consumers purchase the products for their own, and buying for the gifts only 6.8%.

B. The fruit group-buying customers purchase the products with their colleagues or with their relatives; therefore, promoting the products by visiting the companies or using print ads to the companies are the good ways for promotion.

2. The indispensable factors for fruit group-buying

A. The essential factors in fruit group-buying: The stability in product quality, product freshness, the range of excellent, and customer service with hotline are the customers emphasis on. For customers repurchasing, the fruit farmers should provide these four factors.

B. The awarded factors in fruit group-buying: Group-buying has diverse combinations: customer service with hotline, credit card payment, cash on delivery, delivery service within 24 hours after paying. The researchers suggest the fruit farmers in group-buying can increase these five essential factors to improve customers' satisfaction.

3. Providing some suggestions to the agricultural politics: the agricultural politics counsels the fruit group-buying few; therefore, the researchers suggest the agricultural politics as following:

A. Providing specialized training programs: At present, the fruit producers sell their products in the wholesale market primarily, and then selling to the dealers. When the customers buy the products, they have to pay much more because the fruit prices are different from each season and each year. The multi-level transportation will increase the cost. If the fruit farmers do not have promotion abilities, the agricultural politics provides specialized

training programs, such as face to face selling technologies, creating stories to promote the fruits, and BLOG lessons. The fruit farmers have promotion abilities will help the domestic products promotion.

B. Provides the network platform: The agricultural politics may provide the network platform to promote the fruit group-buying information, such as, Taiwan Agricultural Extension Association provides a platform to make customers know which fruit farmers provide group-buying, and who uses the traceability system. The customers have more confidence on domestic fruit and integrate the group-buying information for customers and provide the fruit farmers to promote their products.

C. Establishing quality and security standards: Because the quality of the domestic fruit is unable to be established, the researchers suggest the agricultural politics establish the quality and security standards. Besides Good Agriculture Practice, GAP, and traceability system, providing the confirmation standard and propagandizing to guide the customers to understand in order to assure the security of the domestic fruit quality.

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