CRITERIA INFLUENCING CHOICE OF PORK CHOPS BY KOREAN CONSUMERS

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Background

Consumer preferences likely differ among consumers from different countries. However, no systematic comparative research has been conducted to investigate the preference characteristics of pork for consumers from different countries. In 2001, a series of images of pork chops was published (Dransfield *et al.*, 2001) making possible such a systematic comparison. A worldwide project of consumer preferences of pork chops was then initiated by these researchers (Ngapo *et al.*, 2002) in which similar surveys were organised in more than 20 countries including Korea. Results of the Korean study are presented here.

Objectives

The objectives of this study are to identify the most important characteristics of fresh pork which determine Korean consumer choice and to show any consumer segmentation in choice related to their socio-demographic and cultural differences.

Materials and Methods

The materials, survey methods and statistical analyses have previously been described by Ngapo *et al.* (2001, 2003). Photographs of 16 pork chops were modified for two levels of each of fat cover, colour, marbling and drip and the resulting 256 images published (Dransfield *et al.*, 2001) as 6 series of which series 1+2, 3+4, and 5+6 each contain all 256 images. A series constitutes 8 double-pages, each of which contains the 16 different chops and each chop represents one of the combinations of the four characteristics studied. Both the order of representation of the characteristics and the order of the presentation of the chops in a double-page are randomised.

The survey was carried out in Korea from April to July, 2002. The randomly selected consumers (1014) were asked to choose their preferred chop from each double-page of images. The selection was repeated 8 times completing one series. The consumers then responded to a short questionnaire asking basic socio-demographic and purchase- and eating-behaviour information.

The choices made for each of the four characteristics studied were analyzed individually and compared using χ^2 test. For each consumer and using all choices, the sum of the number of times each combination of characteristics was selected was calculated. Using the sums for each combination, a contingency table was constructed comprising all the consumers and their choices. Using this contingency table, a correspondence analysis using all 15 dimensions was undertaken accounting for 100% of the variability. The coordinates of each consumer obtained in the 15 dimensions of the correspondence analysis were used as the basis for the cluster analysis. The number of clusters to be retained was selected by considering the "distance" between clusters and the profile of the resulting graph. A disjoint cluster analysis was then carried out forcing the consumers into the different clusters. Links between the consumer choice-based clusters and questionnaire items were determined using χ^2 test. Similarly to the choice data, correspondence and cluster analyses were undertaken to define clusters based on the questionnaire items.

Results and Discussion

Some of the socio-demographic characteristics of the sample of 1014 Korean consumers surveyed (Table 1) showed that more than 50% were less than 35 years old and more than 75% lived in large groups (4 or more people in the household). Preferences of the consumer panel (Figure 1) showed significant differences within a characteristic in the number of choices for colour, marbling and drip (χ^2 test, p-value < 0.0001). The first dimension of correspondence analyses was colour comprising 21.9% of variability. Approximately equal numbers of consumers were observed in each of the dark and light colour categories showing that the consumers selected for one of the two levels of colour and both levels were important. The second dimension was drip (10.9% of variability) with ¾ of the consumers preferring no drip and the third was marbling (8.6% of variability) with 2/3 of consumers preferring marbled pork. There appeared to be no consensus for any particular combination of the four characteristics studied.

Clustering, used to group consumers with similar strategies for pork chop selection resulted in the retention of 4 clusters, for which the selection characteristics of each cluster are shown in Table 2. The clusters can be defined as:

- Cluster 1: 97 consumers (10%) who tended to prefer light red meat.
- Cluster 2: 81 consumers (8%) who prefer light red meat with some fat cover and no drip.
- Cluster 3: 430 consumers (42%) who have a strong preference for dark red, marbled meat without drip.
- Cluster 4: 406 consumers (40%) who have a strong preference for light red, marbled meat without drip.

The distribution of each item from the socio-demographic characteristics was then calculated for each of the choice-based clusters above. Significant links with clusters were observed (p-value<0.05) for the following items:

- Cluster 1: equal numbers men and women, and married and single. Compared to other clusters, a greater proportion perceive they live in the country/village.

- Cluster 2: equal numbers men and women, more married than single. Compared to clusters 1 and 4, a greater proportion who consider pork expensive.

- Cluster 3: more woman than men, equal numbers of married and single. Compared to other clusters, a greater proportion of 16 to 24 years and smaller proportion of 45-54 years. Compared to clusters 1 and 4, a greater proportion consider pork expensive.

- Cluster 4: more women than men, more married than single. Compared to other clusters, a smaller proportion of 16 to 24 years and a greater proportion of 45-54 years, greater proportions wear false teeth and perceive that they live in town/city, smaller proportions possess a freezer and have lived in the country for more than one year.

Analyses based on socio-demographic items gave 2 different consumer clusters which were linked to the choice-based clusters 3 and 4 (Table 3). The most striking difference was that cluster A was composed of 99% single consumers and cluster B of 99% married consumers. More single consumers (cluster A) preferred darker marbled meat without drip (cluster 3), whereas more married consumers (cluster B) preferred lighter, marbled meat without drip (cluster 4).

Conclusions

Both the results of the French (Ngapo *et al.*, 2003) and the present surveys, gave four clusters of consumers, but they were not the same in terms of the choice strategies used, nor in terms of their relationships with the socio-demographic items. The interesting apparent similarities (such as, both colour levels being equally important to consumers in both countries) and differences (such as, the strong preference for lean meat in France; no fat preference in Korea) make for a desire to compare the results from the two countries. However, due to the differing socio-demographic make-up of the consumer panels from the two countries, simple and direct comparison of the clusters based on choice and their relationships with the questionnaire items is not possible, but is being investigated.

Table 1. Characteristics of the consumer panel.

| Characteristics		% Consumers
Age (years)	16-24	26
	25-34	28
	35-44	25
	45-54	17
	55-64	3
	65 or older	1
Gender	female	66
	male	34
Marital status	Single/widowed	43
	married/defacto	57
Number people in house	1	1
	2	6
	3	15
	4	46
	5 or more	31
Salary (increasing from 1 to 6)	1	26
	2	36
	3	18
	4	11
	5	5
	6	3
Education completed at (years)	16	6
	17 – 18	2
	19 – 22	56
	23 or older	36
	still studying	37
Live in	town/city	15
	country/village	85
Lived in country	<1 year	53
	>1 year	47
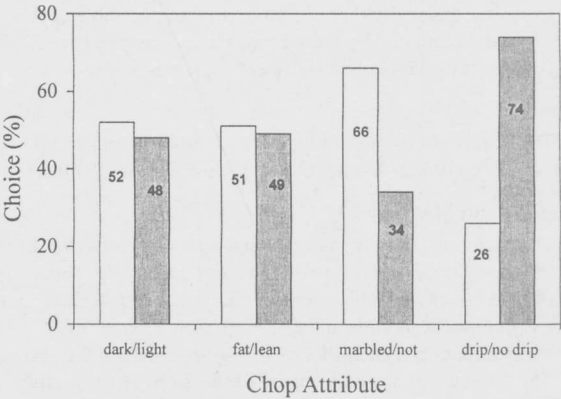
Figure 1. Choices of the 4 chop characteristics studied.

Table 3. Relationship between socio-demographic- and choice-based clusters. Significant differences (χ^2 test) compared to entire panel are in bold (p-value<0.05).

Choice Clusters	Socio-demographic Clusters	
	A	B
1	47	53
2	43	57
3	**53**	**47**
4	**33**	**67**
Entire panel	44	56