Production and marketing of cretan olive oil and wine

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PRODUCTION AND MARKETING OF CRETAN OLIVE OIL AND WINE

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Abstract:
Following the previous paper, the authors enter in the details of production and marketing of olive oil and wine products. A new methodology is presented in order to assess the potential impact of improved commercialisation

Keywords: CRETAN, OLIVE OIL, WINE, MARKETING, PRODUCTION

1. Introduction

Several suggestions have been proposed to explain what has prevented agricultural marketing from using the multidisciplinary approach followed by marketing, thereby maintaining its own individuality. The two most predominant are:

— Marketing is mainly concerned with business decisions and objectives, while agricultural marketing has been developed primarily as a policy subject concerned with governmental intervention (Bateman, 1976);

— The structure of farming consists of thousands of small businesses in which individual farmers have little contact with the consumer and are characterised by a limited capacity to manage the agricultural marketing mix of product, price, promotion and distribution (Meulenberg, 1986; Ritson, 1986).

This paper presents some significant results from the market of two Cretan agricultural products, olive oil and wine, using an original expert decision support system. Sections 2 and 3 deal respectively with the production of olive oil and wine in Greece. The research methodology is outlined in Section 4, while preliminary results from its application in the Greek market are presented in Section 5.

2. Olive oil

Olive oil production is of great social and economic value to a large portion of the Greek population. It has been estimated that up to 400,000 families are involved in the

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production, extraction and marketing of olive oil (Kiritsakis, 1988). Approximately 50% of Greek farms grow olives on some of their land, and on some islands such as Crete, almost all farms have olive trees (Papageorgiou, 1987). Average overall olive oil production during the period of 1975-1990 for the geographic regions of Greece is displayed in Fig. 1.
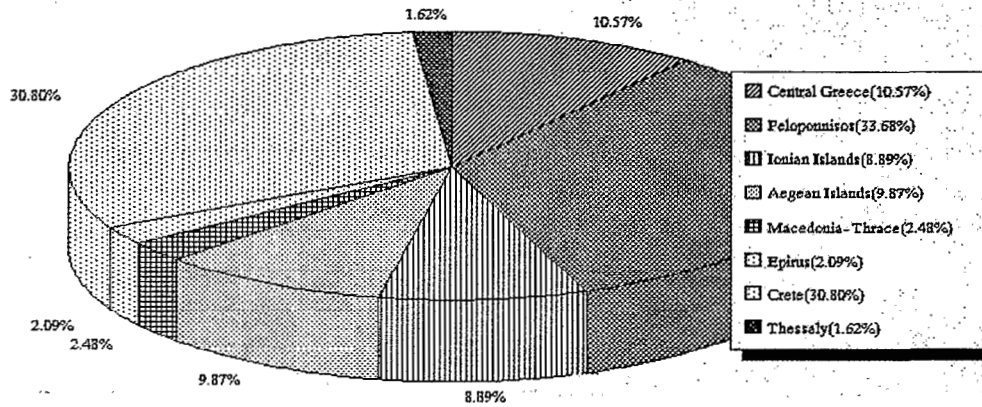

Source: National Statistical Service of Greece, (N.S.S.G.), 1991

Fig. 1.
Distribution of Greek olive oil production (averages for 1975/76-89/90, (000's of tonnes)

According to data provided by the International Olive Oil Council for the 1978-1991 crop years, the EC produces on average 60% of world production; Greece and Crete contribute 16% and 4.8% respectively to the total world output. The average distribution of Cretan olive oil production for the four Cretan prefectures is presented in Fig. 2
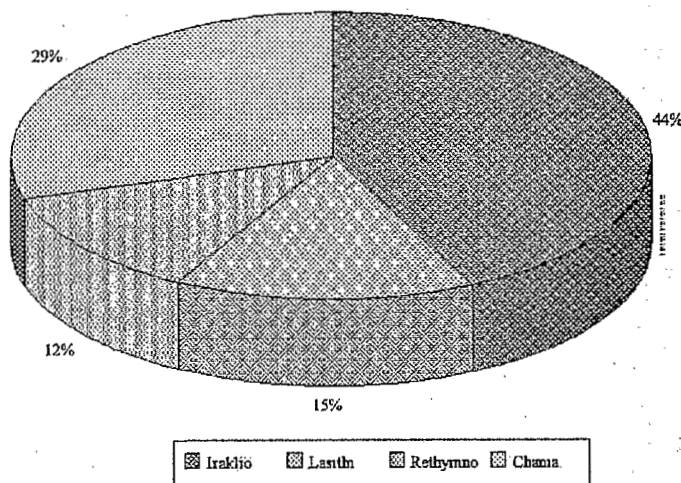
Source: N.S.S.G. (1991)

Fig. 2. Average olive oil production for the four Cretan prefectures, 1975-1990, (000's of tonnes)

4. Methodology

The market research methodology for a new product development consists of four stages (Fig. 5).

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        ┌──────────────────────────────┐
        │     Market Environment       │
        └──────────────────────────────┘
                     ↑↓
        ┌──────────────────────────────┐
        │ Analysis of Consumer Behaviour │
        └──────────────────────────────┘
                     ↑↓
        ┌──────────────────────────────┐
        │        Market Trends         │
        └──────────────────────────────┘
                     ↑↓
        ┌──────────────────────────────┐
        │   Market Share Forecasting   │
        │        (Simulation)          │
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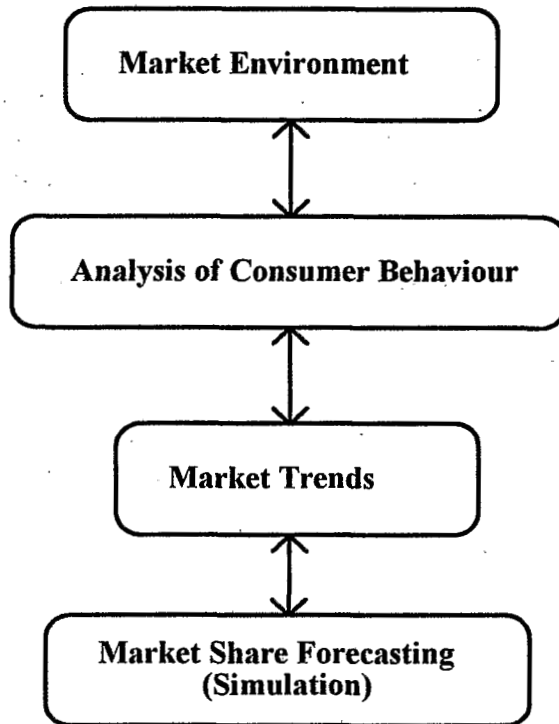
Fig. 5. Market research methodology

In the first stage, these activities take place:

a) Input of competing products on the market;
b) Collection of information on:
    the production and sales of the products;
    the technical features of the products;
c) Preliminary analysis of consumer behaviour;
d) Questionnaire construction;
e) Conducting the sample survey.

The analysis of consumer behaviour occurs in the second stage. Through criteria analysis, the information obtained is :

a) the determinant criteria of market behaviour;
b) the percentage of consumers for whom a criterion is considered important;
c) market segmentation by criterion or a combination of criteria.

Market trends are determined by certain data analysis methods (De Lagarde, 1983; Lebart *et al.,* 1984):

1. Principal Component Analysis
2. Correspondence Analysis
3. Multiple Correspondence Analysis
4. Discriminant Analysis
5. Q-Analysis

Consumer behaviour analysis is performed by the UTASTAR method (Siskos and Yannacopoulos, 1985) an improved version of the multicriteria method UTA by Jacquet-Lagrèze and Siskos (1982). The method assesses a utility function which is as consistent as possible with consumer ranking of the products being investigated.

The market shares estimation contains the set of products A={$a_1,a_2,...,a_m$} for which a set of consumers has expressed its preferences. This is based on the formula

$$MS(a_i) = 100 * S_i / \sum_{i=1}^{m} S_i \%$$

where S_i is the score of product a_i calculated as the sum of purchasing probabilities from the set of consumers. The purchasing probability of a product is estimated through consumer utility according to three rules respectively established by Luce (1959), Lesourne (1977), and Spiliopoulos (1987).

5. Applications to olive oil and wine

This methodology was employed in two market surveys of Cretan olive oil and wines. Some initial results are presented below.

The case of Cretan olive oil

Two hundred consumers were interviewed in a number of retail stores in Athens, Greece. Fig. 6, presents the results using principal component analysis on a set of consumer attitudes and demographic characteristics. The consumers are separated into two categories. The group of consumers lying on the left of the vertical axis uses only extra virgin olive oil while group on the right uses regular olive oil. In addition, the left group substitutes corn oil for frying, while the right one uses sunflower or soya oil for this purpose.
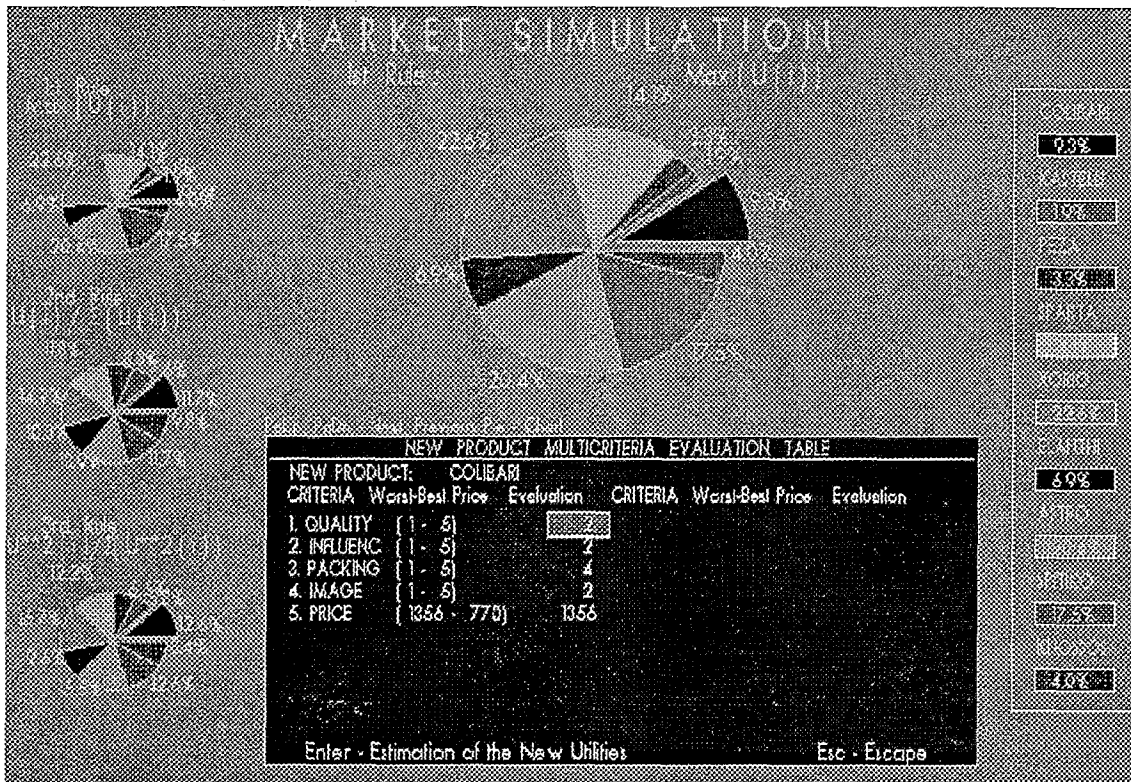
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Fig. 7. Market shares of olive oil products - New product multicriteria evaluation table

The multicriteria table at the bottom of Fig. 7 shows that for olive oil from Agricultural Co-operative of Kolymvari, consumers are not informed about product quality (note 2), environmental influence and company prestige (note 2), although they rate its packaging highly.

The case of Cretan wine

The analysis for wine obtained from the principal component analysis is shown in Fig. 8. Three hundred Athenian consumers were surveyed in several large retail supermarkets. Overall, consumers were ignorant about Cretan wines in general.
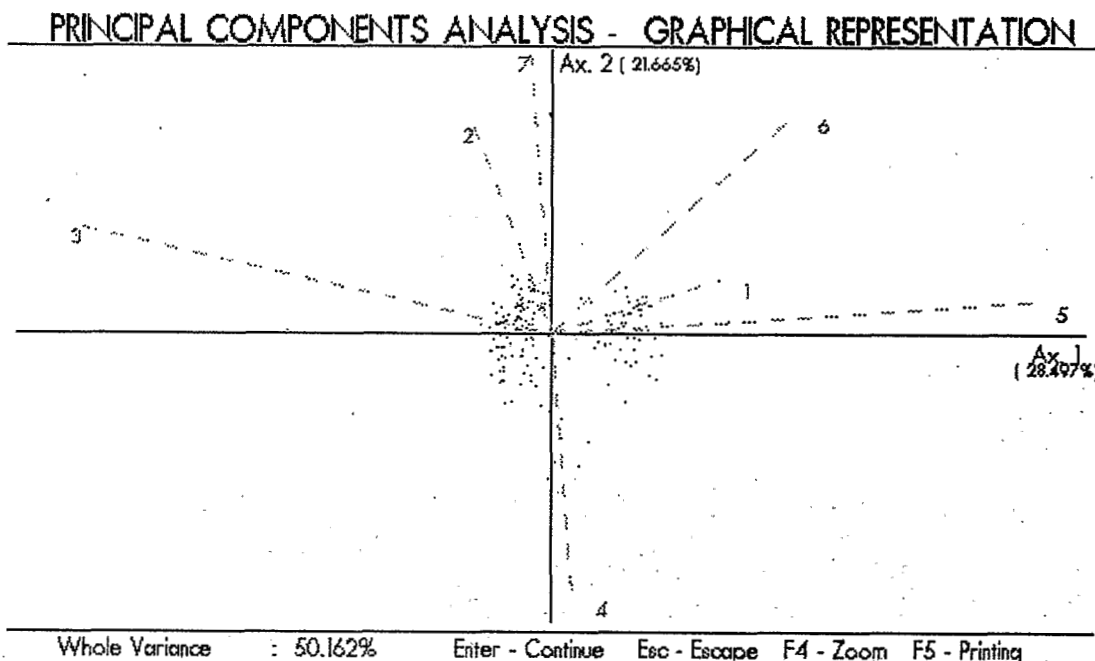
PRINCIPAL COMPONENTS ANALYSIS - GRAPHICAL REPRESENTATION

Fig. 6. Consumer features with respect to different oils

Ranking	Criteria	Consumers (%)
1	Company's image	88
2	Packaging	54
3	Influence	51
4	Quality	40
5	Price	3

Table 1. Olive oil choice criteria ranking

Table 1 presents the order of choice criteria and is based on the portion of consumers for whom the criteria appear to determine their buying behaviour.

The market share of each examined olive oil product based on Spiliopoulos' rule is presented in Fig. 7. The estimation of market shares according to all three rules and the multicriteria evaluation of the new product are also displayed in the same figure.

The average wine production distribution for 1970-1990 in the four Cretan prefectures is shown in Fig. 4.

28%

5%

4%

63%

| Heraklion | Lasithi | Rethimno | Chania |
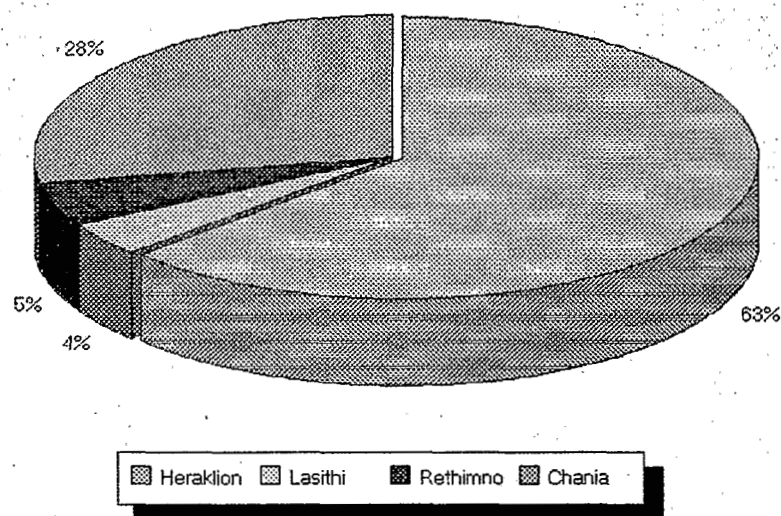
SOURCE: N.S.S.G. (1991)

Fig. 4. Wine production in Greece and Crete, 1970-1990, (000's of tonnes)

International wine regulations separate wines into two categories: table wines and appellation of origin wines, with certain a priori characteristics applied to the latter. The natural factors of cultivar, soil and climate, combined with the techniques used during cultivation and wine making procedures contribute to a wine's qualitative characteristics.

Marketing methods used for wine are more advanced and sophisticated than those for olive oil. The majority of wine buyers are not simply buying an alcoholic beverage but benefit from and take advantage of additional services offered with this product. Spawton (1991) notes that these extra benefits include price, the outlets where the product is sold, the image of the winery, the personality of the wine maker, the respectability of the agent or distributor, and the communication mix, which consists of word of mouth, wine journalism, sales promotion and advertising.

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The existing distribution channels for olive oil are currently complex, lengthy and sometimes untrustworthy, with many participants involved in the distribution chain: the grower, privately-owned or co-operative mills, privately-owned or co-operative packing and bottling units, brokers, distributors, wholesalers and retailers.

Olive oil production offers employment to the local population which is of vital importance for the less-developed rural areas. Farms on Crete are small, labour intensive and family-run. Olive growing offers a supplementary source of income which can be combined with activities such as agrotourism or other tourist services in the summer months. A decline in olive oil farming is expected to lead to soil erosion, desertification and rural depopulation.

3. Wine

Cretan wine production accounts for a significant share of the total Greek production; Fig. 3 compares Greek and Cretan wine production for the crop years 1970-1990.
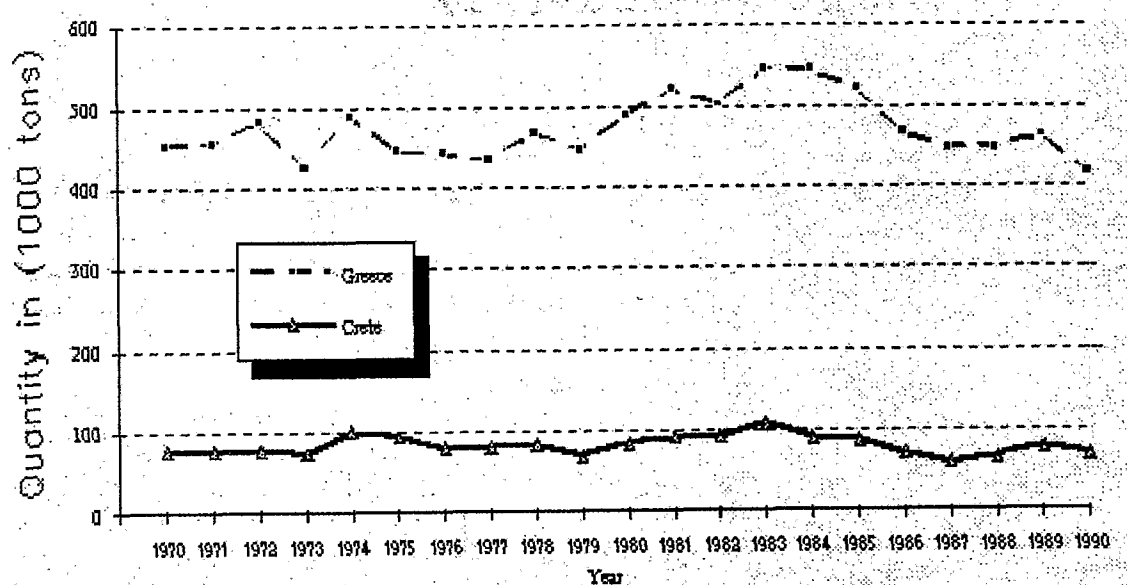
Source: N.S.S.G (1991)

Fig. 3. Wine production in Greece and Crete, 1970-1990, (000's of tonnes)

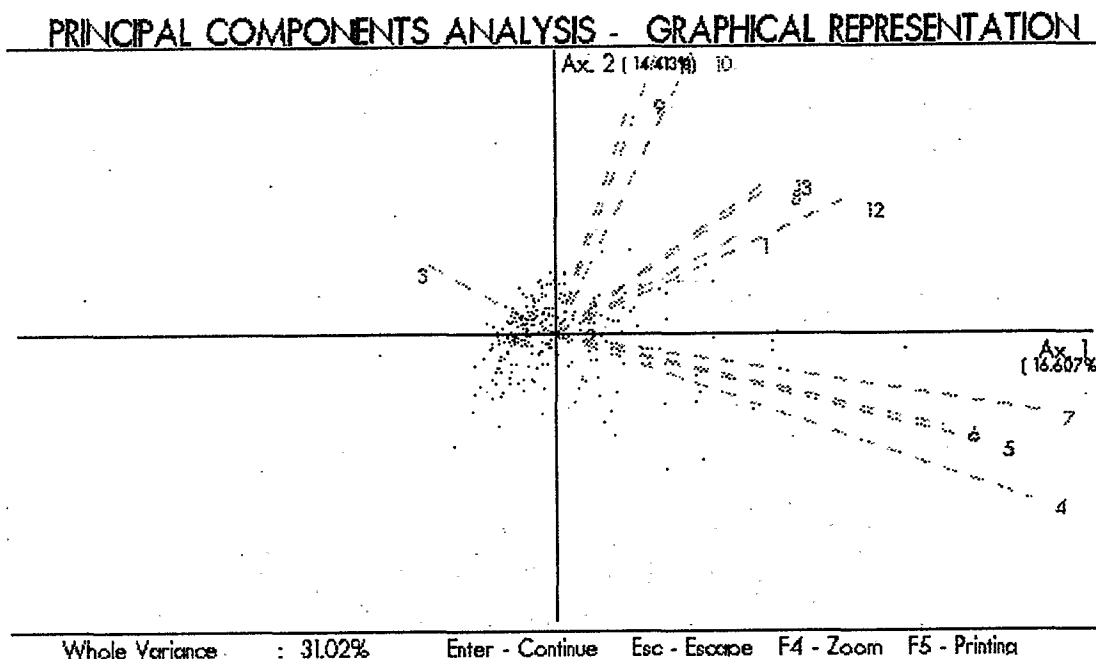## PRINCIPAL COMPONENTS ANALYSIS - GRAPHICAL REPRESENTATION

Fig. 8. Consumer features with respect to different wines

Concerning quality, consumers perceive Cretan wines (vectors 4, 5, 6 and 7) differently from other Greek wines. The data analysis methods indicate that this differentiation is valid for wine characteristics such as:
— authenticity
— quality
— environmental influence.

Ranking	Criteria	Consumers (%)
1	Quality	78
2	Odour	59
3	Image	44
4	Packaging	35
5	Authenticity	15
6	Influence	14
7	Price	8

Table 2. Ranking of wine choice criteria

Table 2 shows the ranking of choice criteria according to their relative importance estimated for each consumer separately.. The market share of each product based on Luce' rule is shown in Fig. 9.
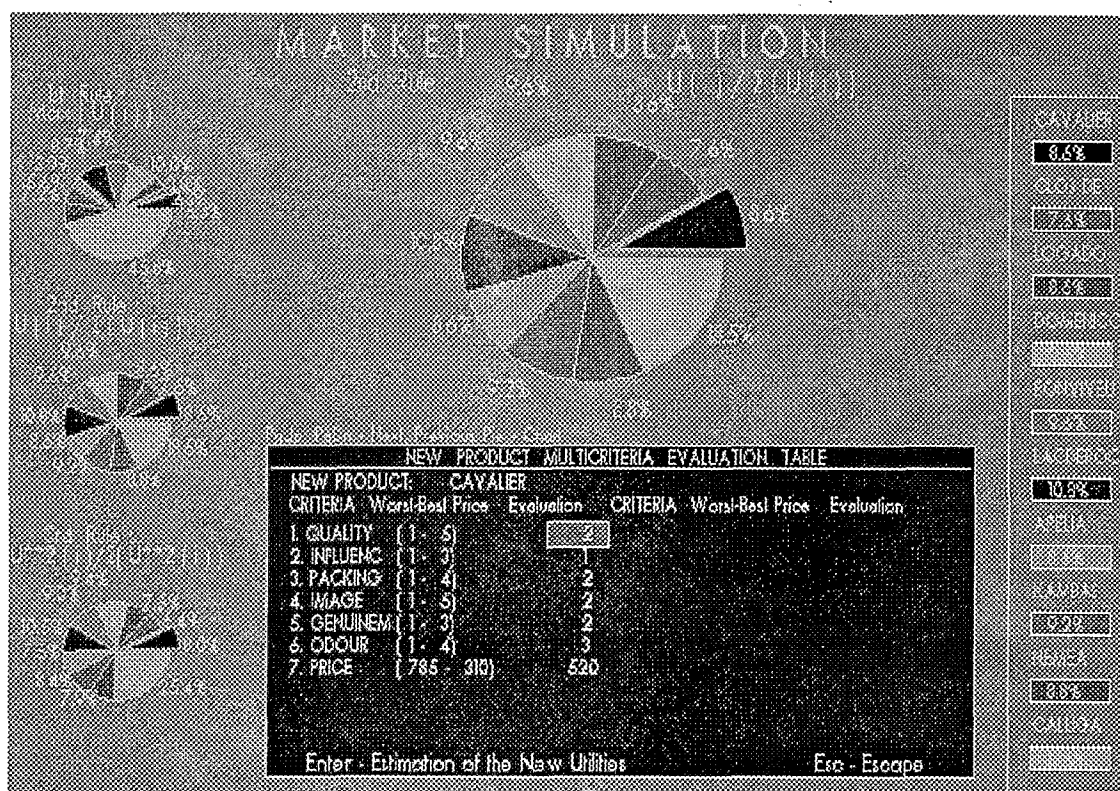
Fig. 9. Market shares of the wine products - New product multicriteria evaluation table

Average consumer estimation for each product is presented in the multicriteria table. For Cavaliere wine, produced by the Co-operative of Kastelli, consumers claim to know nothing about quality, packaging, the image of the firm and the authenticity. Environmental factors do not influence choice. Only the odour of Cavaliere wine has been found good by consumers.

6. Conclusion

The preliminary analysis identifies distinct market segments for extra virgin olive oil and ordinary olive oil, while Cretan wines are significantly differentiated from other Greek wines.

New surveys are planned to be realised in selective European countries, to stimulate the export of Cretan products to these countries.

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