*Short communication*

# A COMPARATIVE STUDY ON PISTACHIO MARKETING IN IRANS TROPICS

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***Abstract***

*Pistachio is the most important agricultural crop which has been extensively cultivated in Iran's tropics. The country earns sizable income from Pistachio export. Currently Pistachio is exported to many countries through Pistachio cooperative and private exporters. This paper aims to analyze the marketing costs, margin and efficiency of major channels of Pistachio marketing in Iran. Necessary data were collected through personal interview of randomly selected 100 sample farmers and 10 sample exporters/processors in Kerman province in the crop year 2004–2005. Shepherd model and Ranking market performance indicators method were employed in this study. The results show that although none of the channels are economically efficient, but Pistachio cooperative channels are relatively more efficient than private channels. Since there are some more indicators which were included while using composite index, the results of the second method seems more accurate and reliable. According to composite index export to European countries was the most efficient channel with the lowest mean score of 2.16, followed by central Asian countries (2.5), export to Arab countries (2.66), export to the other markets (3.83), export to south east Asian countries (4.5) and sell to domestic market (4.66).*

**Key words:** Marketing efficiency; market margin; marketing cost; shepherd model; composite index

## INTRODUCTION

Iran is the world's largest producer and exporter of Pistachio accounted for 52.89, 58.00, 64.79, and 65.84 percent of world production, cultivated area, export quantity and export value, respectively (FAO, 2003).Currently Pistachio export earnings stand next to petroleum. Around 10 percent of non-petroleum export value of the country is realized only from pistachio.

Pistachio is cultivated in Iranian dry regions with low rainfall of nearly 100 mm/year with also extreme geographical climate and temperatures. High salinity level of agricultural water and inadequate irrigation are the crucial recent constraints which farmers are facing (Sedaghat, 2006).Recently the productivity of Pistachio orchards has declined and also the share of Iran in Global Market has decreased significantly (Sedaghat, 2002; Sedaghat 2006). As such areas are not suitable to produce other crops economically; hence Pistachio plantation remains the only opportunity of farmers. Moreover Pistachio is one of the major exported produce of the country, so exporting of the produce through the most efficient channels should be aimed to benefit not only producers/exporters, but also the country as a whole in the long run.

Few literatures on Pistachio marketing in Iran, mainly focused on domestic market are existed. Shafiey (1999) studied marketing services and margins in Rafsanjan.She revealed that services are at a minimum level. She suggested for a government intervention in the market to cope with the existing problems. Sedaghat (2000) in his study in Fars Province focused on current obstacles in Pistachio market. He mentioned that the marketing efficiency was very low. The main reason for low efficiency was lack of technical knowledge needed and lack of marketing cooperatives existed in the region. Salem (2001) and Sedaghat (2005) also did their study on Pistachio marketing different aspects in Iran. The main importance of this study in compare with the previous ones is that her we are going to focus on export channels and also to compare domestic and export channels. Moreover the efficiency of Pistachio cooperative will be compared with private exporters/wholesalers.

The main objective of this paper is to examine the channels of marketing and to estimate the marketing margin, cost and efficiency, using appropriate models.

## MATERIALS AND METHODS

### Data sources

Rafsanjan city accounts for 39.42, 43.35, and 49.14 percent of total area planted, bearing gardens and production of Kerman province was purposively selected for the study. Multistage random sampling technique was adopted to collect the necessary data from individuals. In the first stage 40 villages and in the second stage 100 farmers were selected randomly based on the population of each village. In addition to the sample farmers, 10 processors – cum – exporters were randomly selected for detailed study in the crop year 2004–2005.

### Analytical tools

To analyze the market performance of Pistachio, different models and indicators adopted were as follows.

The total marketing cost was determined by the following formula

$$TC = Cp + \sum_{i=1}^{n} Mc_i$$

TC = Total cost of marketing
Cp = Producer cost of marketing
$Mc_i$ = Marketing cost by the $i_{th}$ trader

The absolute margin of the middlemen /traders was determined as follows

$$Am = Ps_a - (Pb_a + Mc)$$

Am = Absolute margin of the middlemen / trader
$Ps_a$ = Selling price of the trader
$Pb_a$ = Buying price of the trader
Mc = Marketing cost of the trader

The producer's share in export price calculated by the following indicator

$$Po = (Pp/Pr) \times 100$$

Po = Producer's share in export price
Pp = Producers' price
Pr = Landing price in exporting country

To determine the marketing efficiency of different channels of marketing, the approach of analysis of marketing margins as a commonly used approach was used. Two different methods were applied to define the marketing efficiency, namely; Shepherd method and Ranking market performance indicators method (Composite method) .The related formulas applied were:

Marketing efficiency using Shepherd model (Shepherd, 1965):

Marketing efficiency= [(Value added by marketing) / (cost of marketing services)] × 100

**Marketing efficiency using composite method (Ramakumar, 2001):**

$$Min\ R = R_i / N_i$$

$R_i$ = Sum of ranks in each channel
$N_i$ = number of performance indicators

Here, different marketing channels were identified and the marketing efficiency in each channel was computed by ranking different marketing indicators for the respective channel. Ranks were attached to each performance indicator. By pooling all the indicators, the marketing efficiency was calculated. Here the channel with the lowest composite index is the most efficient channel. The indicators used were producer price, exporter price, marketing cost and rate of return.

## RESULTS AND DISCUSSION

**Pistachio marketing in Iran**

There were six major marketing channels for Pistachio in Iran. They were the domestic market and five export markets. The main agents who deal with exports of pistachio are wholesalers/exporters and Rafsanjan Pistachio Cooperative. They had bought the produce from 41 and 49 percent of farmers accounting for 72 and 25 percent of total produce sold in cropping year 2002–2003 respectively (Iran Agricultural Bank, 2002).

**Quality and variety –wise prices of Pistachio**

The Domestic as well as international market prices of the crop year 2004–2005, for major Varieties of Pistachio are shown in Table 1. It could be seen that the lowest prices were for Fendoghi tiny and Kaleghoochi tiny in domestic market and for Fendoghi tiny and Fendoghi non-split in international market. The highest prices were for Kaleghoochi split in domestic market and for Akbari split in international market.

**Tab. 1:** Variety – wise prices of Pistachio in domestic and international markets during 2003–2004

| Price / Variety | Price in international market (10 Rials/kg) | Price in international market (10 Rials/kg) |
|---|---|---|
| Fendoghi split | 2 605 | 3 231.10 (3.63) |
| Fendoghi – non split | 2 256 | 2 517.87 (2.83) |
| Fendoghi tiny | 1 550 | 2 589.19 (2.91) |
| Kaleghoochi split | 3 161 | 3 659.00 (4.11) |
| Kaleghoochi – non split | 2 377 | 2 919.05 (3.28) |
| Kaleghoochi tiny | 1 766 | – |
| Akbari split | 3 152 | 4 033.42 (4.53) |
| Akbari – non split | 2 405 | – |
| Akbari tiny | 2 775 | 3 721.40 (4.18) |
| Overall | 2 450 | 3 239.83 (3.64) |

Note: Numbers in parentheses show the international market prices (US $/Kg). The exchange rate used for converting the international market prices to domestic currency was US$ 1 = 89 010 Rials

**Marketing margin and efficiency of Private wole-salers/eporters**

The results related to marketing efficiency in existing channels of marketing used by the private whole salers/

exporters using the Shepherded formula are shown in Table 2. The highest producers' share in export's price occurred in the most efficient channel (Central Asian Countries) while producer's price and export's price were the highest in the channel of export to the European Countries. As here we are examining export channels than domestic one, so it seems that still the best channel is export to European Countries.

The results concerned to marketing efficiency of all the existing channels of marketing handled by the private wholesalers/ exporters using Composite index are shown in Table 3. According to this model, export to European Countries found to be the most efficient channel.

**Tab. 2:** Marketing margin and marketing efficiency of private wholesalers/traders in different channels of Pistachio marketing in Iran using Shepherded formula

| Different channels | Price paid by traders (10 Rials/kg) | Price received by traders (10 Rails/kg) | Marketing cost of traders ( 10 Rials/kg) | Absolute marketing margin ( 10 Rials/kg) | Marketing efficiency Index | Producer's share in export price (%) |
|---|---|---|---|---|---|---|
| Export to European Countries | 2 920 | 3 728 | 160 | 648 | 405 | 78.33 |
| Export to South East Asian Countries | 2 132 | 3 060 | 80 | 848 | 1 060 | 69.67 |
| Export to Central Asian Countries | 2 599 | 2 960 | 100 | 261 | 261 | 87.80 |
| Export to Arab Countries | 2 620 | 3 359 | 80 | 659 | 823.75 | 78.00 |
| Export to Other Markets | 2 327 | 3 132 | 120 | 685 | 570.83 | 74.30 |
| Sale in Domestic Markets | 2 100 | 3 200 | 50 | 1 050 | 2 100 | 65.62 |
| Overall | 2 450 | 3 239.83 | 98.33 | 691.83 | 870.09 | 75.61 |

**Tab. 3:** Results of marketing efficiency for different channels by private exporters/wholesalers using Composite Index

| Components \ Channels | Export to European Countries | Export to South East Asian Countries | Export to Central Asian Countries | Export to Arab Countries | Export to Other Markets | Sale in Domestic Market |
|---|---|---|---|---|---|---|
| a) Producer share in export price (%) | 78.33 | 69.67 | 87.80 | 78.00 | 74.30 | 65.62 |
| Rank | 2 | 5 | 1 | 3 | 4 | 6 |
| b) Marketing cost (10 Rials) | 160 | 80 | 100 | 80 | 120 | 50 |
| Rank | 5 | 2 | 3 | 2 | 4 | 1 |
| c) Marketing margin (10 Rials) | 648 | 848 | 261 | 659 | 685 | 1 050 |
| Rank | 2 | 5 | 1 | 3 | 4 | 6 |
| d) Rate of return (marketing margin/marketing cost) | 4.05 | 10.60 | 2.61 | 8.24 | 5.71 | 21 |
| Rank | 2 | 5 | 1 | 4 | 3 | 6 |
| e) producer 's price | 2 920 | 2 132 | 2 599 | 2 620 | 2 327 | 2 100 |
| Rank | 1 | 5 | 3 | 2 | 4 | 6 |

| Components \ Channels | Export to European Countries | Export to South East Asian Countries | Export to Central Asian Countries | Export to Arab Countries | Export to Other Markets | Sale in Domestic Market |
|---|---|---|---|---|---|---|
| f) Exporters/Wholesaler's price | 3 728 | 3 060 | 2 960 | 3 359 | 3 132 | 3 200 |
| Rank | 1 | 5 | 6 | 2 | 4 | 3 |
| g) Total score | 13 | 27 | 15 | 16 | 23 | 28 |
| h) Mean score | 2.16 | 4.5 | 2.5 | 2.66 | 3.83 | 4.66 |

**Tab. 4:** Marketing margin and marketing efficiency of Rafsanjan cooperative in different channels of Pistachio marketing using Shepherded formula

| Different channels | Price paid by cooperative (10 Rials/kg) | Price received By cooperative (10 Rials/kg) | Marketing cost by cooperative (10 Rials/kg) | Absolute Marketing margin (10 Rials/kg) | Marketing efficiency Index | Producer's share in export prices (%) |
|---|---|---|---|---|---|---|
| Export to European Countries | 3 154 | 3 728 | 160 | 414 | 258.75 | 84.60 |
| Export to South Asian Countries | 2 303 | 3 060 | 80 | 677 | 846.25 | 75.26 |
| Export to Central Asian Countries | 2 807 | 2 960 | 100 | 53 | 53 | 94.83 |
| Export to Arab Countries | 2 830 | 3 359 | 80 | 449 | 561.25 | 84.25 |
| Export to Other Markets | 2 513 | 3 132 | 120 | 499 | 415.83 | 80.23 |
| Sale in Domestic Market | 2 268 | 3 200 | 50 | 882 | 1 764 | 70.87 |
| Overall | 2 646 | 3 239.83 | 98.33 | 495.66 | 649.84 | 81.67 |

**Marketing margin and efficiency of Rafsanjan pistachio cooperative**

The results concerned to marketing efficiency of the existing channels of marketing followed by the Pistachio cooperative using the Shepherded formula are shown in Table 4. Although export to Central Asian Countries found to be more efficient, but taking in to consideration the prices received by producers and exporters, here again export to European Countries is the best channel.

The results concerned to marketing efficiency of the existing channels of marketing handled by Pistachio cooperative using Composite index are shown in Table 5. According to this model, export to European Countries found to be the most efficient channel.

## CONCLUSION

Neither the marketing channels of existing cooperative nor private exporters are absolutely efficient. The results obtained by Shafiey (1999) and Sedaghat (2000) in Pistachio domestic market also confirm the same fact.

The results obtained by the Shepherded formula show that Pistachio cooperative is relatively more efficient than private wholesalers /exporters. Moreover results show that in general exporting markets are relatively more efficient than domestic market. The most efficient exporting channel was export to European countries. The comparison between Shepherded formula and Composite index in evaluation of marketing efficiency shows that the results are different while using either for pistachio cooperative or for private exporters/wholesalers. Since there are some more indicators which are included in composite index, the results obtained from this method seems more accurate and reliable.

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**Tab. 5:** Results of marketing efficiency for different channels by Rafsanjan cooperative using composite index

| Components \ Channels | Export to European Countries | Export to South east Asian Countries | Export to Central Asian Countries | Export to Arab Countries | Export to Other Markets | Sale in Domestic Market |
|---|---|---|---|---|---|---|
| a) Producer share in export price (%) | 84.60 | 75.26 | 94.83 | 84.25 | 80.23 | 70.87 |
| Rank | 2 | 5 | 1 | 3 | 4 | 6 |
| b) Marketing cost (10 Rials) | 160 | 80 | 100 | 80 | 120 | 50 |
| Rank | 5 | 2 | 3 | 2 | 4 | 1 |
| c) Marketing margin (10 Rials) | 414 | 677 | 53 | 449 | 499 | 882 |
| Rank | 2 | 5 | 1 | 3 | 4 | 6 |
| d) Rate of return (marketing margin/marketing cost) | 2.59 | 8.46 | 0.53 | 5.61 | 4.16 | 17.64 |
| Rank | 2 | 5 | 1 | 4 | 3 | 6 |
| e) producer received price | 3 154 | 2 303 | 2 807 | 2 830 | 2513 | 2 268 |
| Rank | 1 | 5 | 3 | 2 | 4 | 6 |
| f) Price received by Exporter/Wholesaler | 3 728 | 3 060 | 2 960 | 3 359 | 3 132 | 3 200 |
| Rank | 1 | 5 | 6 | 2 | 4 | 3 |
| g) Total score | 13 | 27 | 15 | 16 | 23 | 28 |
| h) Mean score | 2.16 | 4.5 | 2.5 | 2.66 | 3.83 | 4.66 |

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