

Original Research Article

<https://doi.org/10.20546/ijcmas.2020.908.249>

## Economic Performance of Pomegranate Growers of Tumkuru District of Karnataka, India

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### ABSTRACT

#### Keywords

Economic performance, Average cost and return, Constraints and suggestions

#### Article Info

Accepted:  
20 July 2020  
Available Online:  
10 August 2020

The present study was carried out in two taluks namely Sira and Pavagada of Tumkur District in Karnataka state during 2017-18 to understand the economic performance of Pomegranate growers. A sample of 90 pomegranate growers was selected by using random sampling technique for the study. The results revealed that more than half (53.34%) of the pomegranate growers belonged to medium level of economic performance. Variables such as land holding, farming experience, annual income, extension participation, extension contact, scientific orientation, innovative proneness, market orientation, education, mass media participation and Cosmopolitanism had positive and significant relationship with economic performance of pomegranate growers. Major constraint faced by the pomegranate growers was fluctuation in market price and they suggestion given by them was to provide disease resistant varieties and providing regular technical know-how on improved cultivation practices.

### Introduction

Pomegranate is an important fruit crop grown in tropical and subtropical regions of India and is commonly known as Dalim, Anar and Matulum. The cultivation of Pomegranate was started since ancient time and growth excels in dry climate. In Karnataka, pomegranate occupies an area of 28.09 thousand hectares with the production of 328.92 thousand metric tonnes and productivity of 11.71 metric tonnes per hectare (Ministry of Agriculture and Farmers

Welfare, GoI, 2016-17). The predominant pomegranate growing districts are Chitradurga, Tumkur, Koppal, Bagalkot, Bijapur, Raichur, Belgaum, Bellary and Dharwad. In Tumkur district, Pomegranate is being grown on commercial scale. The area under pomegranate in the district is 3328.10 ha with the production of 35.40 thousand tonnes with the productivity of 10.64 tonnes per hectare.

It is observed that the average yield of pomegranate at national level is 11.70 metric

tonnes per hectare and the average yield at state level (Karnataka) is 11.71 metric tonnes per hectare. Similarly, the average yield in the study area i.e., in Tumkur district is 10.64 metric tonnes per hectare, which is lower than the national and state average yields and also it is lower than the potential yield that is 15 metric tonnes per hectare. However, recent studies have shown that there is a tremendous scope to increase the pomegranate yield further and the fact is that all the farmers are not getting the potential yield. To enhance the production and productivity of fruit crops, Government of India, as well as Government of the Karnataka has implemented many horticultural development programmes. Number of improved crop production practices is recommended to get maximum benefits, yet the growers are not adopting all the recommended practices and their cultivation practices varies from grower to grower according to their profile characteristics, availability of factors of production and problems in the cultivation and marketing. Keeping this in view, the present study was conducted with the following specific objectives includes to understand the Economic performance of Pomegranate growers. To find out the relationship between Economic Performance with profile characteristics of Pomegranate growers. And also to enlist the constraints and suggestions of pomegranate growers

## **Materials and Methods**

The study was conducted during 2017-18 in Tumkur district of Karnataka state. Tumkur district was purposively selected for the study because it is one of the major producers of pomegranate and also, pomegranate is gradually becoming a popular fruit crop among the farmers of Tumkur district because of frequent droughts and consequent failure of seasonal crops. Out of 10 taluks in the district, two taluks namely Sira and Pavagada

were selected based on the criteria of maximum area under pomegranate cultivation. Three hoblis from each selected taluk were selected randomly by considering number of pomegranate growers available. Totally six hoblis were selected namely Gowdagere, Hulikunte, Sira kasaba hoblis from Sira taluk and Nidagal, Y. N. Hosakote, Pavagada kasaba hoblis from Pavagada taluk. A sample of 90 pomegranate growers from both the taluks were selected by using random sampling technique. Ex-post-facto research design was adopted for the study. The Economic performance was measured by following the procedure developed by Shankaraiah and Crouch (1977).

Economic performance index (EPI) for a pomegranate grower was calculated by using the following formula:

$$EPI = \left( \frac{\text{Value of total output in rupees for a period of one year}}{\text{Total expenditure in rupees incurred for a period of one year}} \right) \times 100$$

Based on the economic performance index (EPI), the growers were grouped into three categories with mean and standard deviation as a measure of check. The statistical tools and tests such as frequency, percentage, mean, standard deviation and correlation were used to analyse the collected data.

## **Results and Discussion**

### **Overall economic performance of pomegranate growers**

The findings in Table 1 shows that, 53.34 per cent of the pomegranate growers belonged to medium level of economic performance, 24.44 per cent and 22.22 per cent belonged to low and high level of economic performance, respectively. The probable reasons for medium level of economic performance were higher productivity of the crop as well as high value of the crop. Other reason for this may

be due to higher land holding and farming experience followed by medium level of annual income, cosmopolitaness, scientific orientation, innovativeness and risk orientation. The results obtained in the present study were supported by the findings of Harish (2010) and Vinayak (2014).

### **Average cost and return analysis of pomegranate growers**

The Table 2 depicts that the average yield in the study area was 20.50 quintal per acre, average cost of production was Rs. 1,25,850 per acre whereas average gross return and average net returns were Rs. 3,35,650 and Rs. 2,09,800 respectively. The returns per rupee of expenditure were found to be 2.67.

### **Relationship between Economic Performance and Profile Characteristics of Pomegranate Growers**

The results in Table 3 indicates that independent variables such as land holding, farming experience, annual income, extension participation, extension contact, scientific orientation, innovative proneness and market orientation exhibited significant relationship with economic performance of pomegranate growers at one per cent level of significance. Whereas variables like education, mass media participation and cosmopolitaness had shown significant relationship with economic performance of pomegranate growers at five per cent level of significance. The variables like age, family type, social participation and risk orientation had non-significant relationship with the economic performance of pomegranate growers.

There was a significant relationship between land holding and economic performance of pomegranate growers. The probable reason that higher the land holding higher will be the yield and returns and it also correspond to

resource rich farmers who adopt technically sound practices. The relationship between farming experience and economic performance of pomegranate was found to be significant. The possible reasons that experience in pomegranate cultivation leads to have good contact with the marketing channels, good management efficiency fetching higher profit. The extension participation and extension contact exhibited significant relationship with economic performance of the pomegranate growers. The possible reasons were extension participation helps pomegranate growers to know and learn about the cultivation practices. Extension contact aids in getting necessary advices for increasing the returns of the pomegranate growers. These outcomes are similar to the results obtained by Harish (2010).

The annual income had significant relationship with the economic performance of pomegranate growers. The reason could be that the farmers were not only depending on the income from pomegranate cultivation, they were also involved in other income generating activities like field crops, animal husbandry, poultry etc. for their livelihood and the scientific orientation was also significant, the possible reason might be due to the fact that pomegranate growers had better ability to try and adopt new and scientific practices resulting in higher returns. The findings of the present study were in line with the outcomes of Vinayak (2014).

The innovative proneness had significant relationship with the economic performance of pomegranate growers. The possible reason for this may be that pomegranate growers had capacity to try new practices and would strive hard towards adopting those practices resulting in higher income. The results of the present study were supported by findings of Hairsh (2010). The relationship between market orientation and economic performance

of pomegranate growers was found to be significant. The possible reason might be that the pomegranate growers with frequent contact with market will have enough market information and market intelligence which in

turn help them to know about the market demand, market price and marketing channels. The findings have conformity with the results of Ziaulla (1996) and Latha (2003).

**Table.1** Overall economic performance of pomegranate growers (n=90)

Economic Performance	Number	Percent
Low (<159.55)	22	24.44
Medium (159.55-172.40)	48	53.34
High (>172.40)	20	22.22

Mean=165.98                      Standard Deviation=12.85

**Table.2** Average cost and return analysis of pomegranate growers (n=90)

Average Yield (Quintal/acre)	Average Cost of Production (Rs./acre)	Average Gross returns (Rs./acre)	Average Net returns (Rs/acre)	Returns/Rupee of expenditure
20.50	1,25,850.00	3,35,650.00	2,09,800	2.67

**Table.3** Relationship between Economic performance and profile characteristics of Pomegranate growers

Sl. No.	Characteristics	Correlation coefficient
1	Age	0.042 <sup>NS</sup>
2	Education	0.244 <sup>*</sup>
3	Family type	0.122 <sup>NS</sup>
4	Land holding	0.322 <sup>**</sup>
5	Farming experience	0.342 <sup>**</sup>
6	Annual income	0.348 <sup>**</sup>
7	Mass media participation	0.248 <sup>*</sup>
8	Extension participation	0.347 <sup>**</sup>
9	Extension contact	0.372 <sup>**</sup>
10	Social participation	0.118 <sup>NS</sup>
11	Cosmopolitaness	0.223 <sup>*</sup>
12	Scientific orientation	0.326 <sup>**</sup>
13	Innovative proneness	0.293 <sup>**</sup>
14	Risk orientation	0.105 <sup>NS</sup>
15	Market orientation	0.342 <sup>**</sup>

\*\* Significant at 1 per cent level

\* Significant at 5 per cent level

NS Non-Significant

**Table.4** Constraints of pomegranate growers (n=90)

Sl. No.	Constraints	No.	Percent	Rank
<b>A</b>	<b>Production constraints</b>			
	Lack of availability of quality seedlings	65	72.22	II
	Lack of irrigation facilities	70	77.78	I
	Lack of timely availability of inputs	46	51.11	IV
	Lack of timely availability of skilled labours	51	56.67	III
<b>B</b>	<b>Technological constraints</b>			
	Lack of knowledge and skill in identifying diseases and pests	78	86.67	II
	Lack of knowledge on post-harvest practices	72	80.00	III
	Difficulty in pest and disease management	83	92.22	I
	Lack of knowledge about pruning practices	36	40.00	IV
<b>C</b>	<b>Marketing constraints</b>			
	Lack of transportation facilities	28	31.11	VI
	Fluctuation in market price	90	100.00	I
	Lack of market information	71	78.89	IV
	Lack of market accessibility	38	42.22	V
	Lack of storage facilities	90	100.00	I
	Middlemen problem	79	87.78	III
<b>D</b>	<b>Financial constraints</b>			
	High cost of inputs	74	82.22	III
	Lack of credit facilities	80	88.89	I
	High initial cost for garden establishment	68	75.56	IV
	Delay in getting subsidies	76	84.44	II

**Table.5** Suggestions of pomegranate growers (n=90)

Sl. No.	Suggestions	No.	Per cent	Rank
<b>1</b>	Providing technical know-how on improved cultivation practices of pomegranate	78	86.67	II
<b>2</b>	High quality grafts/seedlings should be made available by the Department of Horticulture through registered nursery	63	70.00	VIII
<b>3</b>	Providing technical know-how on post-harvest practices	65	72.22	VII
<b>4</b>	Provision of storage facilities at village level	50	55.55	X
<b>5</b>	Technical advice regarding integrated pest and disease management	76	84.44	III
<b>6</b>	Providing market information through various extension functionaries	72	80.00	V
<b>7</b>	Timely availability of inputs with reasonable prices	55	61.11	IX
<b>8</b>	Encouraging forming of commodity based organisations	48	53.33	XI
<b>9</b>	Providing comprehensive crop insurance	74	82.22	IV
<b>10</b>	Disease resistant varieties of pomegranate should be made available	85	94.44	I
<b>11</b>	Providing guidance on account keeping	41	45.56	XII
<b>12</b>	Direct selling of pomegranate through co-operative organisations	58	64.44	VI

There was a significant relationship between education and economic performance of pomegranate growers because of the reason that education helps an individual to maintain records, estimate input-output relationship and to become aware of the market demand and market prices which contribute for achieving higher returns. The results of the present study were in line with the outcomes of Latha (2003) and Harish (2010).

The mass media participation had significant relationship with the economic performance of pomegranate growers. The probable reason for this was exposure to mass media would help them in gathering more information about new practices through radio, television, newspaper and other literature related to pomegranate which in turn helping them to get additional profit in pomegranate cultivation. The findings of the present study were supported by the outcomes of Vasanth Kumar (2000) and Harish (2010). The relationship between cosmopolitanism and economic performance of pomegranate growers was found to be significant. The possible reason is that the constant and repeated exposure to outside the social system helped them in getting new ideas, skills and cultivation practices which yields additional returns. The outcomes of the study have conformity with the results reported by Thimmaraju (1989) and Harish (2010).

### **Constraints of pomegranate growers**

The data in Table 4 shown rank-wise information about the production, technological, marketing and financial constraints faced by the pomegranate growers in the research area.

#### **Production constraints**

A critical analysis of the data revealed that lack of irrigation facilities (1<sup>st</sup> rank), lack of

availability of quality seedlings (2<sup>nd</sup> rank), lack of timely availability of skilled labours (3<sup>rd</sup> rank) and lack of timely availability of inputs (4<sup>th</sup> rank) were the major constraints for pomegranate production. The probable reasons were disproportionate rainfall, continuous drought, ground water depletion, irregular power supply, lack of demand-oriented supply of inputs, untimely and inadequate supply of inputs by input agencies, urbanization, migration and high labour cost.

#### **Technological constraints**

The data indicates that the technological constraints like difficulty in pest and disease management (1<sup>st</sup> rank), lack of knowledge and skill in identifying diseases and pests (2<sup>nd</sup> rank), lack of knowledge on post-harvest practices (3<sup>rd</sup> rank) and lack of knowledge about pruning practices (4<sup>th</sup> rank) were the major constraints. The possible reasons were lack of technical guidance, poor extension contact, low extension participation, lack of awareness about the importance of pruning and post-harvest practices.

#### **Marketing constraints**

The respondents perceived that the major marketing constraints were fluctuation in market price (1<sup>st</sup> rank), lack of storage facilities (2<sup>nd</sup> rank), middlemen problem (3<sup>rd</sup> rank), lack of market information (4<sup>th</sup> rank), lack of market accessibility (5<sup>th</sup> rank) and lack of transportation facilities (6<sup>th</sup> rank). The reasons might be the irregular market supply and demand, distant market, lack of good contact with the marketing channels, lack of awareness about market intelligence and information.

#### **Financial constraints**

The respondents expressed that the major financial constraints were lack of credit

facilities (1<sup>st</sup> rank), delay in getting subsidies (2<sup>nd</sup> rank), high cost of inputs (3<sup>rd</sup> rank) and high initial cost of garden establishment (4<sup>th</sup> rank). The probable reasons were non-availability of loan, limited subsidy, insufficient repayment time, complexity in getting loan and substantial increase in the cost of fertilizers, plant protection chemicals.

The constraints reported in the present study have conformity with the findings of Shanabhoga (2016).

### **Suggestions of pomegranate growers**

The data in Table 5 indicates the suggestions of pomegranate growers. Major suggestions were the disease resistant varieties of pomegranate should be made available (1<sup>st</sup> rank), providing technical know-how on improved cultivation practices of pomegranate (2<sup>nd</sup> rank), technical advice regarding integrated pest and disease management (3<sup>rd</sup> rank), providing comprehensive crop insurance (4<sup>th</sup> rank), providing market information through various extension functionaries (5<sup>th</sup> rank), direct selling of pomegranate through co-operative organisations (6<sup>th</sup> rank), providing technical know-how on post-harvest practices (7<sup>th</sup> rank), high quality grafts/seedlings should be made available by the Department of Horticulture through registered nursery (8<sup>th</sup> rank), timely availability of inputs with reasonable prices (9<sup>th</sup> rank), provision of storage facilities at village level (10<sup>th</sup> rank), encouraging forming of commodity based organisations (11<sup>th</sup> rank) and providing guidance on account keeping (12<sup>th</sup> rank).

The probable reasons for this kind of suggestions that there is a huge loss due to pest and diseases, lack of resistant varieties, lack of awareness about improved cultivation practices, difficulty in pest and disease management, crop loss due to weather

fluctuations, lack of market information and intelligence, middlemen problem, price fluctuation, lack of awareness about post-harvest practices, lack of availability of quality seedlings, lack of demand oriented supply of inputs, untimely and inadequate supply of inputs by input agencies, lack of storage facilities, middlemen problem, distant markets and high transportation cost.

In conclusion the findings indicate that majority of pomegranate growers stands in a good position. However, for further improvement, line departments should plan and implement appropriate strategies to educate farmers on scientific cultivation practices. To overcome from marketing and processing problems, suitable measures and policies has to be framed by the Government to provide minimum support price for the produce in addition to establishment of exclusive markets, cold storage and processing units. In order to increase productivity and export potential there is a greater need for integration by bringing together the extension services, credit facilities, marketing, storage and processing units under one umbrella.

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**How to cite this article:**

Pavan Kumar, P., V. Govinda Gowda and Pankaja, H. K. 2020. Economic Performance of Pomegranate Growers of Tumkuru District of Karnataka, India. *Int.J.Curr.Microbiol.App.Sci.* 9(08): 2183-2190. doi: <https://doi.org/10.20546/ijemas.2020.908.249>