



Analyzing the Marketing Margins and Costs of Strawberry Supply Chain Actors: Evidences from Punjab Province of Pakistan

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ABSTRACT

Strawberry is delicious, beautiful and nutritious fruit having sweet essence and attractive aroma. It is produced almost in all the provinces of Pakistan but in Punjab province, it is cultivated in major rural areas. There are many problems in production as well as marketing side of this fruit including improper methods of picking, poor quality of fruit, less production, inefficiency, insufficient and improper storage, transportation facilities and perishability of the fruit. In this context, the study in hand is designed to estimate marketing margins along with identification of main problems faced by selected respondents in the marketing of strawberry in the study area. The present study targeted on Faisalabad city of Punjab province which was selected purposively. The convenient sampling technique was used to collect the data from selected respondents. Total sample size was 155 respondents consisting 45 Farmers, 25 Commission Agents, 35 Retailers and 50 Consumers. A well-structured questionnaire was used to collect the data from selected respondents through personal interviews. Descriptive statistics were used to check the socio-economic profile of selected respondents. The findings of this study depict that marketing margin of commission agent was 7 percent net profit of sale price and marketing margin of retailer was 6 percent net profit of sale price. This study would be helpful to the concerned stakeholders and policy makers.

Keywords: Marketing Margins, Descriptive Analysis, Supply Chain Actors, Punjab Province

1. Introduction

Pakistan is producing a very small quantity of strawberries which are either directly consumed or used in making medicines, ice-cream, flavors, jelly, jams, chocolates, cake and milkshake. Strawberry is widely used in cosmetics like shampoos, moisturizers, cleansers, soaps, etc. It is most appetizing and very nutritious fruit with a sweet essence and attractive aroma. It has enormous dietetic and one of the potential source minerals and proteins particularly iron. Strawberry is best suitable for raw consumption. Delicious fruit but it is a bit expensive in Pakistan. The strawberry, like many other perishable fruits at this time, remained a luxury item only enjoyed by the wealthy peoples (Tariq et al., 2018).

The main varieties of strawberry which are cultivated in Pakistan are Toro and Douglas suitable for southern areas of Pakistan. Strawberries are the only fruit with seeds on the outside of the skin. One strawberry fruit item produces on an average 200 seeds. There is a museum in Belgium just for strawberries. The strawberry was a symbol for Venus, the Goddess of Love, because of its heart shapes and red color. Strawberry fruit plant belongs to the rose family. Overall agriculture is very risky business as well as Strawberry is also very perishable product and its marketing is also very risky and insecure. At the start of the season the price of fruit is charged round Rs.300 to Rs.200 per kg in big cities. Then average price comes down to Rs.100 to Rs.50 per Kg in the mid of the season and end of the season (Aujla et al., 2007).

It is believed that the strawberries and other parts of the strawberry plant can alleviate or aid in the treatment of various diseases or disorders. Many medicinal uses were claimed for the wild strawberry, its leaves and root. The ancient Romans believed that the berries alleviated symptoms of melancholy, fainting, all inflammations, fevers, throat infections, kidney stones, halitosis, attacks of gout, and diseases of the blood, liver and spleen. It is said that the leaves, roots and fruits of this variety of strawberry were used for a digestive or skin tonic. Internally, the berry was used for diarrhea and digestive upset, while the leaves and the roots were used for gout. Externally, it was used for sunburn and skin blemishes, and the fruit juice was used for discolored teeth (Afridi et al., 2009).

Strawberries are highly perishable and need careful handling and severe adherence to suitable postharvest management practices in order to sustain finest fruit quality after harvest. For utmost market life, strawberries need rapid removal of field heat coupled with low temperature storage (0 to 1° C) and maintenance of the cold chain during transport and distribution. With best possible postharvest care and the proper cultivar, strawberries have a 7 to 10 day market life. In order to realize this potential market life, careful attention must be given to all the details of product handling, packaging, and postharvest temperature and relative humidity management. Appropriate postharvest temperature management is the single most important factor influencing strawberry market life and fruit quality. Good field cleanliness is a central aspect of maintaining high percentages of market quality fruit throughout the entire harvest season. Injured, defective, over-ripe, or decayed fruit should be removed carefully from the field during each harvest by

placing it into a separate container on the picking cart. This will prevent the spread of disease from infected/rotting fruit to healthy fruit (Prakash et al., 2018).

Fruits and vegetables are perishable in nature and cannot be stored for longer periods, which result in very sensitive and complicated trading of these horticultural commodities and exposing big challenges to suppliers, processors and traders. In addition, the inconsistent availability of healthy fruits and vegetables from farm-gate to the consumers, continuous quality assurance push by the traders and supermarkets, competitive global environment, increasing trend of better supply by companies of other competitive countries and also more and more implications of quality standards are also other parallel competitive elements making this business more vulnerable and complex. Fruits and vegetables require certain effective post-harvest management practices for better quality and ultimate price (Khatun et al., 2020).

Therefore, the present study aims to cope with the challenges faced by supply chain actors of strawberry. The only integrated way to be applied from farm gate collection through washing, grading, packaging, storage and marketing to ultimate consumers is to establish the consistent and sustainable supply system of "Farm-To- end Consumer", currently transformed as Supply Chain Management (SCM). In this perspective, this study fills the research gap by measuring marketing margin of strawberry stakeholders in a Pakistani context.

The following were research objectives;

- 1) To identify socioeconomic characteristics of targeted respondents.
- 2) To analyze marketing margins and problems of various stakeholders' in supply chain network of strawberry.
- 3) To suggest recommendations based on research findings.

2. Literature Review

Anjum (2000) studied the agricultural marketing system in Pakistan. The current agriculture marketing system in Pakistan had developed over last several decades from primitive and traditional way of marketing produce to that characterized by a certain degree of scientific approach while studying the marketing structure, it was argued that the marketing structure was both diversified and flexible in nature depending upon the commodity's problems and conditions prevailing in various parts of the country. Mohtar (2000) found that marketing system for fresh produce in Malaysia was distinguished by the dominant role of traditional private sector market intermediaries. In this paper he studied the wholesale market management, operation and its structure in Malaysia. There were 15 wholesale markets in Malaysia. Most of the wholesale market in Malaysia was owned and managed by local authorities.

Mahmood (2002) conducted a study to investigate the working of the Faisalabad fruit and vegetable market. The managerial, operational and planning aspects of market were thoroughly thrashed and loopholes in this regard outlined. These market malpractices were common in the form of short weighing of produce, the misquotation of prices, exploitation of farmers in debt and excessive charges for various services.

Ragaert et al. (2003) examined consumer perception and choice of minimally processed Vegetables and packaged fruits. In this paper, consumer perception and choice of these packaged produce was investigated through implementing a consumer survey in Belgium. The first part of the survey consisted of face-to-face interviews (n=294) at the point of sales with people buying minimally processed vegetables and packaged fruits. The second part of the survey was self-administered by consumers at home after consumption (n=237). The likelihood of buying minimally processed vegetables tends to be higher among better-educated consumers and among consumers with young children. Search attributes emerge in terms of importance during the purchasing stage, while experience attributes gain importance after consuming the product. The most important motivation for purchasing minimally processed vegetables relates to convenience and speed, especially for consumers who buy this product during weekends.

Bruchhaus (2005) studied an assessment of consumer preferences for Louisiana strawberries. The objectives of the study were to identify strawberry attributes preferred by consumers, to analyze key demographic factors that influence the decision about the sources of and preferences for strawberries and to identify key steps that the Louisiana strawberry industry might take to improve marketability of a product and profitability of its production. Khair et al., (2008) discussed that by controlling the post-harvest losses could increase the food availability and reduced area needed for production. Clay et al. (2005) studied consumers' needs and preferences for fruit and vegetables.

Bashir et al. (2006) examined the citrus marketing system in the Punjab. They found that citrus in Pakistan hold first position in all fruits with respect to production and are under cultivation. Due to the traditional way of marketing the producers claimed that a major share of consumer price went to market intermediaries. On the other hand, the middlemen claimed that they charged the right amount for their services provided by adding shape, time, place and possession utilities. Given the limitations of time, finance, data management, and traveling, a decision was taken to interview 40 citrus growers, 20 Contractors, 20 Commission agents, 20 Wholesalers, 20 Retailers and 20 Consumers respectively. The result showed that retailers received the highest percentage profit margin of 88 percent followed by the producer whose percentage profit margin was 79 percent. The other market agencies including wholesaler, contractor and commission agents received 71 percent, 65 percent and 53 percent respectively.

Murthy et al. (2007) studied marketing losses and their impact on marketing margins. In this paper post-harvest losses at different stages of marketing and their impact on farmers' net price, marketing costs, margins and efficiency have been presented. Post-harvest losses during handling, transport, storage and distribution are the major problems in agrarian economy, especially in perishable fruits and vegetables.

Aujla et al. (2007) explained the marketing and production potential of fruit in Pakistan. In resource poor farmers were facing problems like pesticides and fertilizers that lead to lower yields and poor quality production. Scarcity in the storage, transportation and infrastructure problems results post-harvest losses.

Elrasheed and Awad (2009) examined the economics of potato production and marketing in Khartoum state Sudan. The aim of this study was to examine socioeconomic characteristics of potato producers in Khartoum state. They collected data from 192 farmers. The result showed that (53.13%) had low education levels and long working experience and Secondary schools and higher education applied for (45.87%) of the sampled farmers, Applying traditional method of planting and suffering huge losses. They suggested that more research on cultural practices and agriculture extension practices were needed in this state.

Mavi et al. (2012) investigated the efficiency of various marketing models and problems of Kinnow growers in Punjab (India). Several marketing models are in practice in the Punjab state for marketing of kinnow, which vary in efficiency. In this study, the potential of marketing of kinnow in the southwestern districts of Punjab has been reported. The study has shown that the kinnow growers suffered a loss by selling produce to pre-harvest contractors as their share in consumer rupee was low.

Jabarin and Karablieh (2011) estimated the fresh Vegetables demand system in Jordan. The main objective of this research is to estimate the different types of demand elasticity for the main fresh vegetables consumed in Jordan. The estimated elasticity can be used to measure the impacts of agricultural policies and can be used to predict future consumption in the context of food security in terms of access, availability, stability, and food quality.

3. Methodology

Dixon and marry (1957) stated that any set of individual or objectives having common observable characteristics constitute a population or universe. The nature of the problem deserves much wider coverage like that of Punjab province as a whole, but due to obvious limitation of the student researcher (time and financial resource) the study was restricted to district Faisalabad of Punjab province. Punjab is known as an Agriculture leader province. This province has huge potential of Agriculture production. The selected districts had the number of farmers, middlemen and customers involved in the farming, buying & selling and consumers of strawberry respectively. So it is easy to access the marketing players for the study of dynamics of the strawberry marketing system. For this purpose, Punjab was considered as the universe. By using convenience sampling technique data was collected from respondents.

A sufficient and scientifically sound sample was essential in order to get the applicable results. The propose study was based on primary data collection. The convenience sampling technique was used to select the sample. The total sample size was 155 respondents consisting of 45 growers, 25 commission agents, 35 retailers and 50 consumers. A questionnaire was prepared for each category of respondent and pre-tested before the data collection. The data were collected by personal interview from each respondent. After data collection, questionnaires were properly checked to make sure that the data was correctly recorded from all respondents completely. Then the entire questionnaire assigns numbers in an order. After that the data was transferred to computer for analysis. The data were edited and entered in computer software for analysis purpose and SPSS (Statistical Package for the Social Sciences) technique was used to analyze and interpret data. To analyze the reflection of socioeconomic characteristics result of the present study the descriptive statistics were used to find out the percentage and frequencies.

The average was calculated by using the following formula

$$AM = \Sigma X / N \quad \dots\dots\dots (1)$$

Where;

AM = Arithmetic mean, N = Total number of observations

ΣX = Total sum of variables

The percentage was calculated using following formula

$$P = F/N * 100 \quad \dots\dots\dots (2)$$

Percentages were calculated in the simple table for the purpose of comparison.

Where:

F= Frequency of a Class, N= Total Number of Observations

3.3.2.1 Marketing Margin Analysis

For calculating the margins of different stakeholders

$$MM = Ps/Sp * 100 \quad \dots\dots\dots (3)$$

Where:

MM = Marketing Margins, Ps = Price spread, Sp = sale price

Price spread = sale price – purchase price

$$GM = Sp - Pp \quad \dots\dots\dots (4)$$

Where:

GM = Gross Margin, Sp = Sale price, Pp = purchase price

$$NM = GM - TC \quad \dots\dots\dots (5)$$

Where:

NM = Net Margin, GM = Gross Margin, TC= Total Cost

4. Results Analysis

4.1 Socioeconomic Characteristics

The socioeconomic and demographic characteristics determine the status of an individual in relation to another member within the social system. Some of these are computed and discussed in this study as under;

4.1.1. Age

Age is a significant demographic variable which effect strawberry farming. More aged producers have more experience and skills regarding production techniques and marketing proficiency while teen aged looks to be in learning stage. According to the finding, out of 45 growers, 13 farmers are in the range of 20-30 years consisting 28.8 percent, 10 strawberry farmers are in the range of 31-40 years consisting 22.2 percent, 14 strawberry producers are in the range 41-50 years consisting 31.1 percent, 7 farmers are in the range of 51-60 years consisting 15.5 percent and 1 farmer are above 45 years consisting 2.20 percent of the total farmers of strawberry.

Table No. 4.1.1: Distribution of Growers According to their Age

Age (Years)	Frequency	Percent
20-30	13	28.8
31-40	10	22.2
41-50	14	31.1
51-60	7	15.5
61 and above	1	2.20
Total	45	100

Source: Author's own calculations

4.1.2. Marital Status of Growers

In the agricultural farming mostly farmers are married. According to my findings, out of 45 farmers, 30 farmers were married consisting 66.6 percent and only 15 farmers were unmarried constituting 33.4 percent which is show table given below.

Table No 4.1.2: Distribution of Growers according to their Marital Status

Marital Status	Frequency	Percent
Married	30	66.6
Single	15	33.4
Total	45	100

Source: Author's own calculations

4.1.3. Education level of Grower

Education is an important factor determining the entrepreneurial abilities of respondent. This has become more important in the Agra based ventures which are more sensitive to handle. In Pakistan most farmers are illiterate or primarily educated. That's why we are not getting progressing in the agriculture field. According my findings, out of 45 farmers, 19 farmers were illiterate, consisting 42.2 percent. 10 farmers were primarily educated

consisting 22.2 percent, 11 farmers were metric holders containing 24.4 percent and 5 farmers were above Matric consisting 11.1 percent which are shown in Table No 4.3.

Table No. 4.1.3: Distribution of Producers regarding their Education Level

Education of Growers	Frequency	Percent
Illiterate	19	42.2
Primary	10	22.2
Metric	11	24.4
Above	5	11.1
Total	45	100

Source: Author's own calculation

4.1.4. Experience of Farmers

Experience of growers, participate a vital role in accelerating the total production of strawberry and eventually income level. Experience, qualification, plant protection measures, fertilizer and land preparation are contributing towards higher crop yield on the farms. According to my findings, out of 45 farmers, 15 strawberries growing farmers were having experience less than 10 years consisting 33.3 percent, 27 farmers were having experience in the range of 10 to 20 years consisting 60 percent, 2 farmers having experience in the range of 21 to 30 years consisting 4.4 percent and 1 farmer were having experience 31 to above years consisting 2.2 percent respectively which are given below.

Table No. 4.1.4: Distributing of Growers according to Farming Experience

Experience(Years)	Frequency	Percent
Less than 10	15	33.3
10-20	27	60.0
21-30	2	4.4
31 to above	1	2.2
Total	45	100

Source: Author's own calculations

4.1.5. Age of Commission Agents

Strawberry farmers sell their whole product to commission agent and commission agent have a very important role in the marketing system of fruit and vegetable. Commission agent then resale his whole product to the retailer and then consumer get commodity from the retailer. According to my findings, out of 25 commission agent, 10 commission agents were aged in the range of 30 to 40 years consisting 40 percent, 10 commission agents were aged in the range 41-50 years consisting 40 percent, 4 commission agents were aged between 51-60 years consisting 16 percent and only one commission agent was above 61 and his age was 61 years consisting 04 percent respectively.

Table 4.1.5: Distribution of Commission Agents according to Age

Age (Years)	Frequency	Percent
30-40	10	40
41-50	10	40
51-60	4	16
61 to above	1	04
Total	25	100

Source: Author's own calculations

4.1.6. Education of Commission Agents

Education is a very important element to get full advantage in any sector. In the commission agent business education element is also very important. In my findings 25 commission agents were Matric or above in educational level consisting 80 percent, 3 were primary educated consisting 10 percent and 3 commission agent were middle educated consisting 10 percent respectively.

Table 4.1.6: Distribution of Commission Agents regarding Education Level

Education Level	Frequency	Percent
Primary	3	10
Middle	3	10
Matric or above	19	80
Total	25	100

Source: Author's own calculations

4.1.7. Experience of Commission Agents

More experience means more knowledge about related business. Experience and knowledge to reduce the losses in every business is very important. In my findings 3 commission agent were experienced 5 or less years consisting 12 percent share, 7 commission agent was in the range of 6 to 10 years consisting 28 percent, 5 commission agent were in the range of 11 to 15 years and 10 commission agent were in the range 16 to above constituting 40 percent respectively .

Table 4.1.7: Distribution of Respondents According to Their Experience

Experience (Years)	Frequency	Percent
5 or less	3	12
6 to 10	7	28
11-15	5	20
16 to above	10	40
Total	25	100

Source: Author's own calculations

4.1.8. Age of Retailers

Age is an important socioeconomic characteristic. More aged people seem more experienced and have more skills regarding in any entrepreneurship. While teen aged looks in learning process. According to my findings, out of 35 retailers, 10 retailers were less than 30 years of age consisting 28.5 %, 23 retailers were in the range 30 to 40 years constituting 65.7 % and 2 retailers were greater than 40 years of age consisting 5.7 % respectively.

Table 4.1.8: Division of Retailers on the Basis of Age

Age (Years)	Frequency	Percent
Less than 30	10	28.5
30-40	23	65.7
Above 40	2	5.7
Total	35	100

Source: Author's own calculations

4.1.9. Marital Status of Retailers

According to my findings, out of 35 retailers, 30 retailers were unmarried consisting 85.7 percent and 05 retailers were married consisting 14.3 percent respectively.

Table 4.1.9: Division of Retailers on the Basis of Marital Status

Marital Status	Frequency	Percent
Single	30	85.7
Married	05	14.3
Total	35	100

Source: Author's own calculations

4.1.10. Education of Retailers

Education plays an important role in developing understandings about a business venture. Educated person can better understand the customers, can do better bargaining on price and handle commodity etc. according to my research, out of 35 retailers, 25 were illiterate consisting 71.4 percent, 8 retailers were primary educated consisting 22.8 percent and only 2 retailers were middle educated having 5.70 percent respectively.

Table 4.1.10: Division of Retailers on the Basis of Age Educate

Education	Frequency	Percent
Illiterate	25	71.4
Primary	08	22.8
Middle	02	5.70
Total	35	100

Source: Author's own calculations

4.1.11. Age of Consumers

According to my findings, out of 50 consumers, 20 retailers were less than 30 years of age consisting 40 %, 13 consumers were in the range 30 to 40 years constituting 26 % and 15 consumers were greater than 40 years of age consisting 10 % respectively.

Table 4.1.11: Distribution of Consumer with Respect to Age

Age (Years)	Frequency	Percent
20-30	20	40
31-40	13	26
41-50	15	10
51-60	10	20
60 to above	2	04
Total	50	100

Source: Author's own calculations

4.1.12. Marital Status of Consumers

In the urban areas of Pakistan marriage time round 30 years or above 30 years and in rural areas marriage age 20 years to 25 years maximum. According research, 19 consumers were unmarried out of 50 consisting 38 percent and 31 consumer were married consisting 62 percent respectively.

Table 4.1.12: Distribution of Consumer with respect to Marital Status

Marital Status	Frequency	Percent
Single	19	38
Married	31	62
Total	50	100

Source: Author's own calculations

4.1.13. Education Level of Consumers

The literacy rate of the customers may affect the purchasing of strawberry because it is useful fruit for digestion and other nutritional aspects. The data in the table reflects there are different customers that have different education level. According to research 5 consumer were illiterate consisting 10 percent, 6 consumers were primary educated consisting 12 percent, 5 consumers were middle passed consisting 10 percent and 34 consumers were Matric or above educated consisting 68 percent respectively.

Table 4.1.13: Distribution of the Consumer according to Education Level

Education Level	Frequency	Percent
Illiterate	5	10
Primary	6	12
Middle	5	10
Matric to Above	34	68
Total	50	100

Source: Author's own calculations

4.2. Marketing Margins Analysis of Strawberry Supply Chain Actors

The marketing of strawberry includes all transactions involving buying, selling or reselling from the time the fruit was grown at farm level until it reached the processing unit or the consumer.

4.2.1. Marketing Margins

4.2.1.1. Marketing Margins of Commission Agents

The commission agent was purchasing strawberry on an average Rs. 140 per kg and was sold to another stakeholder on an average Rs. 160 per kg. The gross marketing margin of commission agent was Rs. 20 per kg out of this marketing cost was Rs. 5 per kg. So the net margin was Rs. 7 per kg. In the marketing chain of strawberry in district Faisalabad, commission agent was getting 6.62 percent of the total margin of the marketing chain. The net profit as percentage of sale price was 4.81 percent. In gross margin of commission agent, marketing cost contributed 27.28 percent whereas the rest of the 72.72 percent was the profits of commission agent. Total costs include transportation and labor cost (loading and unloading) etc.

Average purchase price (Rs. /Kg)	= 140
Average sale price (Rs. /Kg)	= 160
Gross marketing margin (Rs. /Kg)	= 20
Percent marketing margin	= $20/140*100 = 14.25$ percent
Average total costs (Rs. /Kg)	= 9
Average total loss (Rs. /Kg)	= 4
Net Profit (Rs. / Kg)	= $20-13 = 7$
Net Profit as percentage of margin	= $7/20*100 = 35.0$ percent
Net Profit as a percentage of sale price	= $7/160*100 = 4.30$ percent

Table 4.27: Marketing Margins of the Commission Agents (Rs. /Kg)

Item	Avg. Sale Price	Avg. Purchase Price	Gross Margin	Total Cost	Net Profit margin	Net Profit as % of sale price
Strawberry	160	140	20	13	7	
Percent			14.25	46.65	35.0	4.30

Source: Author's own calculations

4.2.1.2. Marketing Margins of Retailers

The retailer was purchasing strawberry on an average Rs. 160 per kg and was selling to end consumer on an average Rs. 175 per kg. The gross marketing margin of retailer was Rs. 15 per kg out of this marketing cost was Rs. 3 per kg, and average total losses Rs. 2 per kg. So the net margin was Rs. 5 per kg. In the marketing chain of strawberry in district Faisalabad, the retailer was getting 6.67 percent of the total margin of the marketing chain. The net profit as percentage of sale price was 3.34 percent. In gross margin of retailer, marketing cost contributed 50 percent whereas the rest of the 50 percent was the profits of retailer. Total costs include transportation, labor cost (loading and unloading) and losses etc.

Average purchase price (Rs. /Kg)	= 160
Average sale price (Rs. /Kg)	= 175
Gross marketing margin (Rs. /Kg)	= 15
Percent marketing margin	= $15/175*100 = 8.57$ percent
Average total costs (Rs. /Kg)	= 4
Average total cost Rs. /Kg)	= 5
Net Profit (Rs. /Kg)	= $15-9 = 6$
Net Profit as percentage of margin	= $6/15*100 = 40$ percent
Net Profit as a percentage of sale price	= $6/175*100 = 4.42$ percent

Table 4.28: Marketing Margins of the Retailers (Rs. /Kg)

Item	Avg. Sale Price	Avg. Purchase Price	Gross Margin	Total Cost	Net Profit margin	Net Profit as % of sale price
Strawberry	175	160	15	9	6	
Percent			8.57	47.26	40	4.2

4.3. Marketing Problems

4.3.1. Major Problems Faced by Strawberry Producers

Potential problems associated with strawberry growing in Pakistan are high input costs, disease attack on strawberry, high transportation costs and Nursery plant availability. Oil prices increase every day which cause trouble in transportation. Small farmers mostly effect with this type of oil price changes. Out of 45 farmers 35 farmers were facing higher transportation charges consisting 77.77 percent. In agriculture, cropping is very risky business there is uncertainty about weather and disease as well. Out of 45 farmers 25 farmers were worried about attack of disease if they cannot able to control at early time then they have to face giant losses. Farmers also worried about high input prices (seed, fertilizer, and oil) and also worried about inflation in every sector as well.

Table 4.3.1: Problems Faced by Strawberry Farmers

Problems	Yes	No	Total
Nursery plant	45 (100 %)	0 (0%)	45.0 (100%)
Higher transportation cost	35 (77.77%)	10 (22.22%)	45.0 (100%)
Attack of disease	25 (55.55%)	20 (44.44%)	45.0 (100%)
Higher inputs costs	30 (66.66%)	15 (33.40%)	45.0 (100%)
Price fluctuations	35 (77.77%)	10 (22.22%)	45.0 (100%)

Source: Author's own calculations

4.3.2. Major Problems of Commission Agents

Every sector has the problem in working position but how to handle with these problems and how to reduce it that is the work! In my study area Faisalabad market committee is more progressed as compared to other market committees. Out of 25 commission agent 15 have good sewerage system consisting 60 percent, in the availability of shed all the commission agents have shed facility consisting 100 percent, 25 commission agents have a waste management facility consisting 100 and 10 commission agent have the drinking water facility in the market committee respectively.

Table 4.3.2: Problems Faced by Commission Agent

Problems	Yes	No	Total
Poor sewerage system	15 (60%)	10 (40%)	25 (100%)
Availability of shed	25 (100%)	0 (0%)	25 (100%)
Wastage management	10 (40%)	15 (60%)	25 (100%)
Drinking water availability	15 (60%)	10 (40%)	25 (100%)

Source: Author's own calculations

4.3.3. Major Problems of Retailers

In the retailer out of 35 retailers 15 have storage facility consisting 42.8 percent, 20 retailers have no storage facility, these retailers have to waste or eat self-left over strawberry consisting 57.14 percent, 20 retailers have poor sewerage condition consisting 50 percent, 20 retailers have proper sewerage facility consisting 57.14 percent, 30 retailers were not happy with government regulations consisting 85.7 percent, 5 retailers enjoying government facilities consisting 14.28 percent and 25 retailers have no their own shops and they retailing their goods on carts consisting 71.42 percent, only 10 retailers have their own shops respectively.

Table 4.3.3: Problems Faced by Retailers

Problems	Yes	No	Total
Storage availability	15 (42.8%)	20 (57.14%)	35 (100%)
Poor sewerage systems	20 (57.14%)	15 (42.8%)	35 (100%)
Lack of government regulation	30 (85.7%)	5 (14.28%)	35 (100%)
Non-availability of shops	25 (71.42%)	10 (28.57%)	35 (100%)

Source: Author's own calculations

4.3.4. Major Problems of Strawberry Consumers

Potential problems associated with strawberry consumers in Pakistan are high inflation rate, improper quality, inappropriate packing material and variation in the prices of fruits. According to research out of 50 consumers 35 were not satisfied with the quality of strawberry consisting 70 percent, 15 consumers are satisfied consisting 30 percent, Strawberry is very perishable commodity its packaging play a vital role to maintain its original form 30 consumers were not satisfied with the packaging of strawberry consisting 66 percent, 20 consumers were satisfied consisting 40 percent, Pakistan currency devaluing with the passage of time which cause inflation 40 consumers are worried with the inflation rate consisting 80 percent and 45 consumers are worried about variation in food prices consisting 90 percent and only 5 consumers not mention variation is a problem respectively.

Table 4.3.4: Problems Faced by Consumers

Problems	Yes	No	Total
Poor Quality	35 (70%)	15 (30%)	50 (100%)
Improper Packing Materials	30 (60%)	20 (40%)	50 (100%)
Inflation	40 (80%)	10 (20%)	50 (100%)
Fluctuation in Prices	45 (90%)	5 (10%)	50 (100%)

Source: Author's own calculation

5. Conclusion

Strawberry is very delicious and beautiful fruit; it has very high demand all over the world and very profitable business if the risk is kept constant. The objectives of this study were to evaluate the socioeconomic characteristics of the respondents, marketing margins of different stakeholders to highlight major problems faced by different stakeholders and suggest policy recommendations. Mostly farmer are illiterate and have no cropping knowledge. Pakistani farmers are getting very less yield as compared to progressive farmers. Various programs should be initiated among farmers to create awareness regarding important factors that might enhance the supply of strawberry and transportation facility should be available to take their commodity in the markets. There should be reduction in marketing margins by involving appropriate government agencies in order to facilitate the producers and consumers.

5.1. Recommendations

Followings are the recommendation of this study;

- Government should ensure a good price after high crop yield.
- Loan without interest rate should be provided at large level with easy terms and conditions.
- Feudalism should be abolished and lands should be allotted to poor farmers. This will enhance the productivity and per acre yield of all the crops in Pakistan.
- Consumer friendly policy must be projected.

- Latest machinery should be provided to the farmers to increase the per acre yield. This provision should be in easy installments so that the farmers can avoid the burden of loans. If possible subsidy should be given by the government of modern machinery.
- The results showed that the most efficient marketing channel comprised of less involvement of market players. Facilities should be provided to the farmers so that they could sell their commodities directly to the retailers. There should be proper handling of the fruit from the producer to the consumer in order to reduce the losses.

5.2. Limitations and Future Research Directions

This study was limited to the Punjab province of Pakistan. It can be extended to different other provinces and can also make analysis with other developing countries. In the future, modern techniques of irrigation can solve the problems of irrigation in Pakistan. This could include drip irrigation and sprinkle irrigation methods. By using this technique the farmers can save a huge sum of money which he pays for irrigation through tube wells and tractors. Similarly, statistical techniques can be used to check the impact of production on marketing margin of strawberry actors.

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