



UNIVERSITI PUTRA MALAYSIA

***FACTORS INFLUENCING CONTRACT FARMING PARTICIPATION
AMONG SAFFRON FARMERS IN IRAN***

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AMONG SAFFRON FARMERS IN IRAN**

By

NAVID TAGHIZADEH SEDIGHI

**Thesis Submitted to the School of Graduate Studies, Universiti Putra Malaysia, in
Fulfilment of the Requirements for the Degree of Doctor of Philosophy**

June 2015

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DEDICATIONS

To My mother, father, sister, my aunts and my beloved grand mother



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Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfillment of the requirements for the degree of Doctor of Philosophy

FACTORS INFLUENCING CONTRACT FARMING PARTICIPATION AMONG SAFFRON FARMERS IN IRAN

By

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June 2015

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Saffron has a special importance and position in the agricultural sector as the most important and valuable export crop but results of the contracts related to this product indicate that farmers do not show much of interest in contract farming participation. The statistics shows more than 40% of farmers who have concluded contracts have revoked them in later stages. Considering the importance of saffron in Iran's agriculture sector, benefits of marketing and farming of saffron as it is stated before and the role of contract farming in reducing risks and increasing productivity and improvements in the supply chain, have made contract farming a good solution to promote saffron farming in Iran. This study is to examine the factors influencing the participation of contract farming of saffron in Iran. It aims firstly, to identify the current marketing practices of saffron in Iran, secondly to determine the factors which motivate contract farmers to participate in contract farming; thirdly to identify the determinants of saffron farmers participating in contract farming, fourthly to compare 3 group of farmers over 3 years and lastly to examine the extent to which demographic characteristics will influence farmers opinion on effectiveness of contract farming.

The study conducted a survey on saffron farmers by using a structured questionnaire. The survey was conducted in the main saffron producing province of Khorasan (Iran) in 2013 (Torbat heydarye, Ghaen and Birjand). The study utilized a cluster random sampling method. A total of 415 saffron farmers were interviewed. One hundred and ninety five saffron farmers were independent farmers, 108 farmers with canceled contract and the remaining (112) were contract farmers. Our findings have supported the fact that saffron farmers in Iran have maintained the traditional marketing practices as they are still dependent on the suppliers. Besides this, saffron farmers still base their decisions by considering the amount of profit they obtain through contract farming. It is nevertheless observed that saffron farmers continue to face the same production and marketing problems compared to dependent Farmers. The main production issues confronting saffron farmers are a lack of technical services and productivity, which had adversely increased the cost of saffron production. The main marketing issue is price fluctuation of saffron and support from government and private companies which has resulted in an uncertain profit margin for farmers.

Factor analysis is carried out to identify latent factors that influence saffron farmers with their participation in contract farming. Findings reveal six very important factors for saffron farmers participating in contract farming, which are commitment, production support, trust, satisfaction, technical support and productivity. Furthermore, findings indicate four factors influencing independent farmers' willingness to not participate in contract farming, as independency, own market access, relationship with suppliers and productivity. In addition the six factors which influence farmers to cancel their contracts are dissatisfaction, miscommunication, not being committed, not being cooperative, no technical or production support, poor market access.

In order to test the significance of the demographic contribution and the effect of contract farming on saffron farming in Iran, the multinomial logit was applied. Multinomial logit findings have revealed that age, education, and profit are the main variables for the effectiveness of contract farming for the saffron farmers. Farmers with higher education participate more in contract farming and also younger farmers are motivated to engage in contract farming to gain inputs, services and credits associated with it. On the other hand profit remains the important variable for farmers to stay independent. Farmers are getting more educated but still income plays vital roles for them. Therefore policy makers need to provide better credit services, insurance, incentives and technological equipment in order to attract more farmers to join in the contract farming. Moreover providing advisory services and training can be helpful in encouraging more farmers to get involved in contract farming by being exposed to the benefits of these activities.

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk ijazah Doktor Falsafah

FAKTOR-FAKTOR MEMPENGARUHI PENYERTAAN PELADANG SAFFRON DALAM LADANG KONTRAK DI IRAN

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Kajian ini dijalankan untuk mengkaji faktor-faktor yang mempengaruhi penyertaan perladangan saffron dalam ladang kontrak di Iran. Tujuan pertama adalah untuk mengenalpasti amalan pemasaran terkini di Iran. Tujuan kedua adalah menentukan faktor-faktor yang memotivasikan petani untuk menyertai ladang kontrak, manakala tujuan yang ketiga adalah mengenalpasti faktor petani saffron dalam menyertai ladang kontrak. Tujuan yang keempat pula adalah untuk membandingkan tiga kumpulan petani dalam tempoh tiga tahun dan akhir sekali untuk mengkaji sejauhmana ciri-ciri demografi yang akan mempengaruhi pendapat petani mengenai keberkesanan ladang kontrak.

Kajian ini menggunakan kajian kuantitatif. Kajian dijalankan keatas petani Saffron dengan menggunakan soalselidik berstruktur. Kajian ini dijalankan pada 2013 di majoriti kawasan yang menghasilkan Saffron di Khurasan (Torbatheydarye, GhaendanBirjand). Kajian ini menggunakan kaedah persampelan rawak kelompok. Seramai 415 petani Saffron telah ditemuramah. 195 petani Saffron adalah petani bebas, 108 adalah petani yang telah terbatal kotrak ladangnya dan 112 petani lagi adalah peladang kontrak. Kajian ini telah menyokong fakta bahawa petani Saffron di Iran masih mengamalkan pemasaran tradisional kerana mereka masih bergantung kepada pembekal. Di samping itu, petani Saffron masih boleh mempertimbangkan untuk menyertai ladang kontrak yang boleh membawa keuntungan. Berdasarkan pemerhatian, petani Saffron menghadapi masalah yang sama, iaitu masalah pengeluaran dan masalah pemasaran. Isu pengeluaran utama yang dihadapi petani Saffron adalah kekurangan perkhidmatan teknikal dan produktiviti, yang menyebabkan peningkatan kos pengeluaran Saffron. Bagi masalah pemasaran, harga Saffron dan sokongan yang tidak menentu telah menyebabkan margin keuntungan para petani berkurangan.

Faktor analisis telah digunakan bagi mengenalpasti faktor tersirat yang mempengaruhi petani saffron untuk melibatkan diri dalam perladangan kontrak. Hasil analisis telah mengenalpasti enam factor utama yang mempengaruhi penglibatan para petani dalam perladangan kontrak. Faktor-faktor yang dikenalpasti adalah komitmen, sokongan pengeluaran, kepercayaan, kepuasan, sokongan teknikal, dan produktiviti. Selain itu, empat faktor yang mempengaruhi kesanggupan para petani yang berdikari mengambil bahagian dalam perladangan kontrak adalah akses kepada pasaran sendiri, hubungan dengan parapembekal dan produktiviti. Faktor-faktor yang menyebabkan para petani membatalkan kontrak perladangan mereka pula adalah ketidakpuasanhati, salahfaham,

tiada komitmen, tiada kerjasama, tiada sokongan teknikal dan sokongan pengeluaran dan juga akses yang lemah kepada pasaran.

Analisis regresi logistic multinomial telah diaplikasikan untuk menguji kepentingan sumbangan demografi dan kesan ladang kontrak mengenai perladangan saffron di Iran. Sehubungan dengan itu, analisis tersebut mendedahkan bahawa umur, pendidikan dan keuntungan merupakan pembolehubah utama keberkesanan ladangan kontrak untuk petani saffron. Petani yang berpendidikan tinggi lebih melibatkan diri dalam ladang kontrak dan petani muda pula lebih bermotivasi mendapatkan ladang kontrak untuk penambahan perkhidmatan input dan kredit. Tambahan pula, keuntungan merupakan pembolehubah penting bagi petani untuk berdikari.



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This thesis was submitted to the Senate of Universiti Putra Malaysia and has been accepted as fulfilment of the requirement for the degree of Doctor of Philosophy.

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LIST OF ABRIVIATIONS

ANOVA	Analysis of Variance
CBI	Central Bank of Iran
CF	Contract Farming
EFA	Exploratory Factor Analysis
FAO	Food and Agriculture Organization
FAOSTAT	Food and Agriculture Organization Corporate Statistical Database
FDA	Food and Drug Administration
GDP	Gross Domestic Product
IRCA	Iran customs administration
KMO	Kaiser-Meyer-Olkin
MAJ	Ministry of Agriculture Jihad
MNL	Multinomial Logit Model
MPB	Ministry of Programing and Budgeting
NGOs	Non- Government Organizations
SCI	Statistical Center of Iran
SPSS	Statistical Package for Social Sciences
USD	United States dollar
WTO	World Trade Organization

CHAPTER 1

INTRODUCTION

1.1 Contract Farming

1.1.1 History of Contract Farming

Contract farming has been used in the more developed countries for a long time. Perishable crops destined for processing, such as sugar beets or cling peaches, were contracted in the United States in the 19th Century. Problems of monopsony or oligopsony by food processors and marketers were also appearing by the late 19th Century, and efforts were made to organize farmers and provide a united bargaining front (Bunje, 1980). There was a need for a legal framework in which to resolve disputes over contracts, to bargain over prices and contract terms, or for the farmers themselves to jointly process the sales of agricultural products. As multinational food processors set up operations in Latin America behind Import Substitution Industrialization (ISI) regimes after the end of World War II in 1945, they often adopted contract farming as the best raw product supply mechanism, particularly where there were controls on land ownership. In Mexico, for example, the strawberry freezers and fruit and vegetable canners in Bajío had already adopted such practices in the '40s and '50s and some of the firms that had maintained plantations, such as the banana producers, adopted contracting as means of defusing nationalistic criticism of their operations. Huacuja, (2001) points to several case studies to exemplify the evident expansion of contract farming on a worldwide scale over the last two decades of the 20th Century. Structural adjustment programs such as import and export restrictions, balancing budgets and not overspending, and removing price controls and state subsidies were implemented. Policies imposed by the World Bank and the International Monetary Fund had a strong positive influence on contract farming in the developing countries.

World Bank and the International Monetary Fund indirectly fostered contract farming, as governments needed to improve their balance of trade and they stimulated the exports sectors. National agrarian policy often cancelled support and subsidies that the government granted for production, trading and services. Traditional producers in rural areas as well as thousands of laid-off urban administrators were looking for alternative ways of survival. Contract farming has been promoted as one of the remedies to poverty (Clapp, 1994), and this has often resulted in the grower's increasing dependence on the food industry and contract farming.

In today's world where agriculture is accompanied by globalization and expansion of financial markets and industrial activities in the agricultural sector, participation of small farmers in local and external markets faces different barriers and problems. Results of such situations are inability of these farmers to compete with major producers and excludes this group of farmers from production scenes. Under such situation, some problems such as migration to cities or urban areas, unemployment, poverty and suburbanization can be regarded as the side effects or possible outcome. In

such cases, governments have made some effort to produce revenue for the rural society but such efforts have not been successful due to the absence of necessary structures and lack of communication between farmers and markets and their confrontation with risks. In such cases, the use of contract farming is employed as the missing link. In fact, this kind of agriculture has allowed the inclusion of technology and capital in the agricultural sector by establishing communication between the farmers and the investors. Under these circumstances, arrival of investors ensures a suitable and timely supply of resources for farmers from two quantitative and qualitative viewpoints. Contract farming can be introduced as an oral or written agreement between farmers and contractors that will ensure the existing market with the production and supply of a crop. This agreement also includes obligations of purchasers to supply resources, provide technology, managerial and technical services. Such an agreement also requires the obligation of farmers toward a person or a company to deliver products with the desirable quality and quantity in timely manner. On the contrary, the investor or the company is obliged to purchase the product or supply resources and services. In this regard, farmers know that they will receive a wage and the contracting party becomes aware of the price of the product making the transaction a useful one for both contracting parties.

One of the most important characteristics of contract farming is its scope in terms of the type of contract. At present, contract farming system is recognized as an important agricultural activity with one side being a purchaser from an international company, small enterprise, governmental agency, rural cooperative or a personal investor.

1.1.2 Concept of Contract Farming

Contract farming is an agreement between farmers and companies processing or marketing agricultural produce and livestock to produce and offer products according to prior agreements and in most cases, with predetermined prices (Eaton & Shepherd, 2001). According to this approach, farmers conclude a contract to solve problems such as a lack of resources or marketing power with agricultural produce conversion companies or marketing companies and in spite of creating sales guarantee terms, can use the services of the other companies which are mainly in field of postharvest. These companies will be assured access to basic required products, for processing and marketing at a specific time. It is worth mentioning that this process can be used generally in cases of trees, other cash crops, fruits, vegetables, poultry farming, raising livestock, and even fish and shrimp.

The basics of such agreements are mentioned as follow:

1. Commitment of farmer to provide specific productions with specified qualitative and quantitative standards on behalf of buyers.
2. Commitment of the company or supporter to back production, marketing or buy agricultural produce. Also the agreement obliges the buyer to provide production support such as presenting supplies, providing technical support and proper training (Alinejad, 2012).

Contract farming refers to a system in which a processing or marketing unit buys the production of a farmer according to product specifications, purchase and sales agreed

to in the contract. The contract specifications are different and most of the times, types, amount, quality and prices of products are adaptive. Generally, signing the contract is a way to share the risks between the producer and the supporter, in other words the producer undertakes production risks and the supporter undertakes the market risks. Of course the way risk is allocated is defined in the detailed contract. In some contracts, the sides just agree on exchanging a specific volume of the product and in some cases, a specified rate is considered instead of the amount of the product and this rate of market fee levels out over the course of sales or it is the difference between the base price and the market price (Baumann, 2000). Contract farming development in Iran is suitable because of many reasons such as:

1. To increase investments in the private sector;
2. To create a stable source of income for farmers;
3. To create occupation in rural communities;
4. To eliminate seasonal unemployment as much as possible;
5. To encourage self-reliance of villagers to overcome obstacles and a better use of available sources (Eaton & Shepherd, 2001)

In contract farming, the meaning of supporter is somewhat vague, as the supporter can be from each of the following sectors and having their own advantages and disadvantages. These sectors are: government, semi-government, private, cooperative and voluntary organizations (NGO).

1. Government Sector

Studies have shown that the government sector has not been successful in implementing contract farming for smallholder farmers due to the bureaucracy involved, lack of incentives for public employees, transfer of employees from one department to another, and other similar problems (Bakhtyari, 2011). Even though in some cases it is said that the government sector is the best one based on the number of its educated employees.

2. Semi-government Sector

This sector can create a compromise between the government and the private sector but in practice it suffers from the problems trickled down from the government sector. It is affected by political and bureaucratic interferences and it is not dynamic enough from the economics point of view. Some of the companies in this sector which are somewhat independent have a more proper performance.

3. Private Sector

The private sector is generally the best option for contract farmers. Of course, this advantage is quantitative because of the financial and managerial, response and having quality staff. There are sometimes challenges with farmers regarding its benefits and of course, there are some methods to solve these issues such as:

- i. Farmers can have a share in the company.
- ii. The government should control the contracts and their implementation.
- iii. Other organizations (NGOs) should control and support farmers and supporters.

Of course, the private sector is willing to implement managerial roles which may have a negative effect on the process of enabling farmers. To overcome this problem, limitations, salary should be specifically mentioned in the agreement (contract).

4. Cooperative Sector

Cooperatives are always the best and the most ideal organizations to integrate all stages of the production process and support farmers properly. Of course they have not been much successful until now due to having political and administrative problems.

5. Voluntary Organizations (NGOs)

Such organizations do not have a prominent role in contract farming but they can be a potential institution for contract farming. (Baumann, 2000)

1.1.3 Overview of Contract Farming in Iran

Agriculture is regarded as an important part of the economy in many developing countries. A considerable percentage of the GNP and employment in these countries are related to the agriculture sector. Due to the importance of agriculture sector in developing countries, low income level, low ratio of capital to labor force and general instabilities are regarded as characteristics of this sector in these countries (Khalil Nejad & Zaman Poor, 2009). In addition, production in the agriculture sector is different from other manufacturing and commercial fields of which the most important are high reliance of activities of this sector on nature and confrontation with a broad scope of natural hazards and disasters which have converted the activities in this section into high risk activities (Yahya & Nadi, 2013). These risks can make farmers worried about repayments of different expenses such as their and their family's basic living expenses. In addition, rural institutions and the loan providers who communicate with these farmers may have their own concerns about the repayment of loans. Different studies have indicated risk aversion of agricultural farmer's especially small and minor farmers. Risk-averse farmers have preferred activities which have lower risks. In addition, risk-averse farmers rarely accept new technologies and are more attracted to traditional cultivation methods (Torkamani & Nikoe, 2012). All of these factors have forced farmers to apply risk cropping strategies. They act cautiously to apply different inputs and accept new technologies and prefer medium and even low but safe production over high but unsafe production. Nevertheless, in cases where farmers know that harmful and uncontrollable loss of income will be compensated, they will tend to allocate resources leading to maximization of production and profits. For this reason, it seeks to achieve the most profitable products despite a higher hazard. To avoid such risks and reduce anxiety of farmers, attempts are made to reduce the destructive effects of potential risks by affecting potential income distribution of farmland or decision variable. To cope with these risks, farmers and rural societies

together with policymakers in countries have created a scope of risk control plans. One of the most important programs is the use of contracts between farmers and purchasers and other institutes.

With globalization and the expansion of world trade, small holder farmer's section needs to become more competitive and consistent with the changes to survive and eradicate poverty and lead the economic growth in countries with low revenue. Generally in Iran about 23 percent of workers are engaged in the agriculture sector, 30.7 percent of the workers are engaged in the industry sector and 43.8 percent of workers are working in the service sector and 2.5 percent of the workers are not classified (Mohajerani, 2009). In spite of considerable progress in recent decades, economic growth in the agricultural sector is not suitable. According to the 5th National Plan the agricultural sector should become commercialized and competitive. Competitiveness of each agricultural unit depends on 3 factors:

1. Managerial skills
2. Improvement of the production process (technology)
3. Improvement of the conditions of market access

In the agricultural sector, signing the contract to perform different dealings and transactions has been common for a long time, such as different types of sharing and renting, but this new type of farming, contract farming, is a new method for earning money, appropriate technology transfer, risk sharing, ensuring product quality and market (Mofidi, 2012).

Contract farming has an ancient history in Iran, but it has been excluded from the National Plans in the country for 30 years. However, this sector has recently been supported by the Ministry of Agriculture due to the needs of the country related to this sector and there is an urgent need to increase its productivity.

Land division, long chain of market mediators, unawareness on what consumers and middle man need and want, low farmland mechanization, traditional farming with low productivity, insufficient capital have all caused farmers to not make percussive decisions about agricultural input. There are also problems of sale and wastes caused by the absence of good farm management systems. These factors prevent farmer having desirable performance resulting from reductions in production. The government cannot solve this problem due to its limitations such as low budget and lack of expertise. In this case, contract farming is formed as a critical and optimal agricultural pattern in which the industry and farming are combined with each other and form a relation to gain mutual profit. Contract farming is the option which allows farmers to collaborate with the private sector to develop and promote farming.

In 1941, tractors first entered villages of Iran to help the cultivation of sugar beet and farmers got familiar with spraying and pest control with this method. Sugar beet cultivation can be regarded as a source of Iranian new farming and experts of sugar plants can be regarded as the first promoters of modern farming. The government has also concluded contracts with farmers and processing plants to encourage farmers to cultivate beet and sugar cane which the lead to the production of sugar. This was the first instances of contract farming in Iran. Since mechanized and semi-mechanized

culture were first used for culturing beet and other crops, beet cultivation has been given more attention by the government and it has gained its support and help on contract farming. When the second civil plan of Iran (1956-1962) was implemented, a bill was also enacted for the private sector to become active in the production of sugar. Since then, contracts for production of sugar, potato, eggs, animal products, wheat, rice and other staple crops have been put into effect until the Iranian revolution of 1979 when for a time they the activities were suspended in this sector though they were given serious consideration in 1995.

The Ministry for Jihad-e-Agricultural is recognized as the pioneer in some contract crops of Iran. A notable example is its efforts in bringing into effect contracts for tomato cultivation with 400 farmers in the north of Iran for the production of tomato paste. An analysis of performance and income of contracted farmers is compared with the other farmers who cultivate tomato for supply in free market and it has shown that performances of the contracted farmers are 64% higher than that of other people.

In Iran the activities of contract farmers are limited to only cultivation of some crops such as tomato, sugar, pistachio, cumin, saffron, oil seeds, cotton, pickled cucumbers, and some garden crops. Exporters of rice, tea and pistachios are planning for an expansion of the contracts with farmers who are performing mechanized cultivation. Seeds confirmed by governmental and private companies are produced in many regions of country through contract farming.

Sugar is generally produced by cooperatives and although the relation between farmers and cooperatives and that of farmers and the private sector is completely different based on the attitude of these two organizations.

Haida Fast Food has arranged contracts with farmers to culture processed cultivars of tomato. Due to provision of inputs and promotional services by this fast food chain, farmers use drop and rain irrigation methods and 40% of water and 20% of chemical fertilizer are saved and performance has increases by 12%.

Contracts were also concluded between Behshahr Farming Company and Green Farming Company in 2002. Green Farming Company provides inputs and other necessary services to farmers such as machinery and credits. Behshahr Farming Company purchases products based on the pre-agreed price to supply other processing companies. The advance purchase contracts conducted by these companies with contract farming companies allow farmers to select a fixed or market-based contractual price in the contract. Green Farming Company performs promotional services from cultivation to harvesting and this activity is instructed by the promoters in a regular plan for farms. Farmers are allowed to gain access to suitable loans by concluding contracts with banks. The Iranian government plan is for one tenth of farmlands to be supervised by contract farming system by 2025. It has decided to develop durum wheat culture through contractual system to create self-sufficiency in production of this strategic product. The Ministry of Jihad-e-Agricultural has been recognized as the only place for identification of suitable durum wheat and is in charge of contract farming. Durum wheat which is mainly used for baking bread, macaroni and other foods is currently being experimentally cultivated in selective farms and under contractual system. The farmer is paid prices for the use of land and the labor force and high

quality seed is also given to farmers and in the case of contract farming being recognized as effective, this will be performed on a commercial level in many rural areas in Iran and based on sources of the Ministry of Jihad-e-Agriculture.

Rojin Tak Tomato Paste Manufacturing Company has concluded an agreement with Agribank of Iran for loans and expertise in tomato cultivation. This bank is establishing relations with other joint stock companies to conclude agricultural contracts which provide inputs such as pesticides, advanced cultivars, chemical fertilizers to farmers. These inputs are financed by Agribank and when the crop is harvested, Agribank purchases it and sells it to different companies with which they have mutual purchasing contracts and credit accounts within one week. Agribank has recently concluded farming contracts with organizations such as Iran Machinery Limited Liability Company to arrange delivery or agricultural machinery for the cultivation of wheat, rice and fruit.

1.1.3.1 Issues of Contract Farming in Iran

Although contract farming is a method of dividing risks between the company and farmer, risk distribution depends highly on some factors such as ability to conclude contracts and discussions, access to other selections and access to information. The problems which farmers and purchasers face are as follows:

The problems which farmers and purchasers face in Iran are as follows:

1. The absence of laws which cause failure to pay debts in contracts. In short-term farming, farmers may be motivated to sell their product in free market in case market price is higher than the price mentioned in the contract. In this case, industry sustains high damages. On the other hand, in long-term farming, companies may not accept contracts completely and pay a price below the agreed rate to the farmers. A farmer has no choice but to produce with lower cost. In this case, there are no laws which support farmers or the industry.
2. There is no legal solution for facing disobedience to contracts. In case a company and a farmer do not face problems in properties and assets investment and there is no choice in favour of either of them, alternative use will be successful according to a contract between them. Of course, some laws related to contract farming have been presented by the Ministry of Jihade-eAgriculture to the parliament for enactment in recent years (Reyahi, et al., 2013).

The issues which farmers face are as follows:

1. Farmers face market failure risks and problems of production particularly at the time of cultivating new plants. Farmers who perform new risky farming transactions should be ready to confront production risks particularly where experience and pre-tests are not applied in the farmland and products are below the expected quality or they are ready for facing market risks particularly when predictions of the company about market or price are not realized.

2. Financial sponsoring companies may not be reliable or may use their exclusive position improperly. The financial sponsors may be greedy and interfere with the rationing. If farmers face production problems, contractors also provide weak technical services or if considerable changes are made in the market conditions the company may reject the contract, forcing farmers to go into debt due to problems of production and high loans.

3. The absence of insurance plans against natural disasters in Iran farming contracts may create problems for farmers. Another limitation is that although risks are divided between farmers and companies, the farmer nevertheless tolerates more pressure because he does not have enough information or access to other positions. Farmers also face problems of weak technical help, delay in payments and also change and disruption of contract by the companies. (Samani, et al., 2012)

The problems which contractors face are as follows:

1. Contracting farmers face land shortage due to the absence of leasing regulations, therefore, long-term stable operations are endangered. Under such conditions, investment by the financial sponsors may be wasted due to disputes between farmers and land owners.
2. Problems will occur when farmers consume the supplied inputs with others. As a result, performance will be reduced. Stages of overcoming such problems include: advanced supervision by the promoters, training farmers and creating awareness with real value and inputs.
3. Low managerial skills, discriminating purchase, delay in payments, improper promotional services, weak agricultural consultations, unsafe transportation of products, change in pricing, respect for management and lack of coordination with farmers can dissatisfy farmers.

Crop processing companies which demand transaction with a limited number of large farmers are forced to work with many small farmers. (Reyahi et al., 2013).

1.1.3.2 Advantages of Contract Farming in Iran

Advantages of contract farming for farmers in Iran are as follows:

1. Farmers are assured of a stable market.
2. With contract farming saffron not forced to identify market opportunities and discuss with local and international purchasers due to low education.
3. Farmers receive fixed price for their products which was mentioned before. Price risk of farmers is considerably reduced.
4. Small number farmers don't accept new technologies due to risks and possible expenses or they are not aware of new technologies or can hardly accept them. They accept new methods when they rely on foreign resources. Entrance of new technology becomes successful only when it is under proper management, suitable operational structure of farming operations, guarantee and insurance. Private agriculture related business accepts technology more than those of the government promotion services because this has direct economic profit for improvement of farmers' products. Most powerful

financial sponsors prefer to provide promotional services and not to rely on the government.

5. The majority of farmers find more guarantees and better market prices for his crops.
6. Farmers can use agricultural contracts as a pledge for receiving credit from commercial banks and paying costs of input.
7. Farmers can get more profit with contract farming when they increase cultivation area and increasing of performance.
8. Contract farming is useful particularly for perishable goods and Iranian farmers sustain much loss. Contract farming encourages farmers to produce perishable goods which are required in processing industry and exports.
9. Contract farming creates new markets which are not given to the independents farmers.
10. Despite permanent purchases, dependency of farmers on brokers is reduced. The high price difference in Iran is due to long chain of brokers. Performance of transactions in the absence of broker not only guarantees better price for the producer but also yields greater profit for the purchasers.
11. Farmer acquires new technical and managerial skills through contract farming. He learns to keep documents, use agricultural resources efficiently, new methods of using chemicals and fertilizers, pay attention to quality and specifications and export market demand.
12. He considers long-term planning and investment. Therefore, farmer will be assured of a future income. (The Ministry of Agriculture Jihad (MAJ), 2013)

Advantages of contract farming for industry in Iran are as follows:

1. Contract farming reduces transaction cost particularly cost of research and information relating to access to raw material. Therefore, companies save considerable cost for attaining these cases.
2. Private sector regularly reaches the desired quality of products or the predetermined prices. Industry can produce crops with desired quality and lower price.
3. Contract farming makes production of plants possible and if there is no contract farming, it would not be given to contracting companies. Another advantage is that it is not forced to purchase from another country.
4. Contract farming allows companies to plan for long-term returns in investments which may relate to food processing, creation of distribution or export networks.
5. The processed goods such as fruits and vegetables for export require high quality standards. In free market purchase, quality, quantity and price of goods are not assured. Therefore, contract farming guarantees the presence of all three cases.
6. Purchasers face problem of access to strategic products because each farmer produces crops according to his demand. Contract farming allows access to strategic products and gain a better price.
7. To produce high quality crops, industry should provide promotional services to the farmers and give the latest agricultural technology and inputs to the farmers to achieve mutual success.

8. Contract farming by small farmers is accepted more particularly when farmer does not have a financial sponsor. (The Ministry of Agriculture Jihad (MAJ), 2013)

Advantages of contract farming for government in Iran are as follows:

Government has made an effort to increase participation of the private sector in provisions of promotional services. This work is done through interference of joint-stock or cooperative companies, banks and recently through contract farming. This helps the government to solve problems of food shortage and increase income of small farmers, give more financial resources to farmers for a better use of farming inputs. In this case, they accept the latest agricultural technologies due to promotional services provided by the private sector. This action leads to growth and development of Iranian farming which includes a major portion of the Iranian population.

1.1.4 Saffron Contract Farming in Iran

Saffron is cultivated in most cities of the Khorasan Province in Iran especially Ghaen, Torbat Heidarieh and Birjand. The growing trend of saffron exports compared to non-oil exports and other products in the agricultural sector and the increase in the rate of foreign exchange on the one hand and doubling the rate of employment in those areas on the other hand have drawn much attention to it.

In the saffron plantation sector Iran has three kinds of farmers; contract independent farmers, farmers with contracts and former contract farmers. In total Iran has 300,000 farmers in the saffron plantation sector according to the Ministry of Jihad-e-Agriculture (MAJ), almost 50,000 farmers have contracts and the rest have none or have cancelled their contracts in 2011. Statistics show that in 2010, 40% of farmers shifted to independent farming and cancelled their contracts. (The Ministry of Agriculture Jihad (MAJ), 2011).

There are some rare products which due to their insufficient supply in the world market, are close to saffron. Since Iran ranks first in the world that it is capable of producing it. With a price between 1000 to 1500 dollars per kg saffron has created a revolution in agriculture and is trying to eradicate poverty from farmers' lives. Also Earning foreign exchange in developing countries is more important for the economy than in developed countries, especially when this is in the agriculture sector. However the cultivation of saffron is done by traditional methods in Iran and no specific technology is used in its production. Productivity in saffron sector will be achievable with contract farming.

An industry or a contractor concludes contracts with saffron farmers which obliges the contractor to purchase the saffron products. The farmer harvests saffron and delivers it to the contractor and contract is based on the quality and amount of saffron. The price is agreed between the farmer and the purchaser and based on various conditions. The purchaser provides the required farming input at due date. The financial sponsors may also perform land preparation, farm cultivation and harvesting operations as well as training and promotional activities. This action is conducted to ensure that agricultural

operations are regularly performed to allow access to predicted performance and the required qualities.

Saffron farmers do not extend cultivation areas unless they know that they can sell their saffron product and merchants do not invest with processors in risky transactions unless they ensure that the required goods can be continually produced. Contract framing provides a potential solution for this position which is creation of market guarantees to the farmers and ensuring them the supply of their products to purchasers. Contract farming allows farmers to gain access to credits to pay costs of inputs. Tendency of some farmers to use these credit agreements improperly such as sale of products to purchasers other than financial sponsors can cause some financial sponsors to reconsider financing more inputs and provide only seed and basic chemicals.

Undoubtedly, with the considerable increase in production without investment and recognition of supply chain and its affiliated industries, its price has been different from its real value and as a result, saffron producers have sustained losses. In this regard, risk caused by climatic factors and low purchase price considering its high value is due to a lack of knowledge and deficiency caused saffron cultivators of Iran to face many problems such as revenue financing, supply of tools and inputs, managerial and technical services. For this reason, the use of equipment such as agricultural contracts has recently been considered in the province to cover and solve these problems and risks.

One of the most important problems of saffron is bulky export to Spain or the neighboring countries such as UAE in which this product is packaged and exported to end consumer markets with lower prices. Therefore, an important part of its value added is given to other countries. Saffron is one of the crops which increase the supply of foreign exchange in Iran. Its earning of foreign exchange was 86.3 and 96.7 million USD respectively in 2005 and 2006. Value of the exports has exceeded 409 million dollars in 2009 (Nabizadeh, Hoseyni, & Zavareh, 2010). With contract farming this problem can be solve.

There are different types of contracts in saffron sector in Iran such as purchase of special quantity of goods and predetermined price and a perfect control on production from seeding to harvesting. There are generally three types of contracts: 1- marketing contracts, 2- production and services contracts, 3- a combination of them.

Contract in saffron sector is an oral or written form between contractor and farmer. Marketing contract determines purchase price or providing product to market. In this case, managerial decisions are given to the farmers because producer is the owner of goods until final harvesting. one of the issues of farmers complained about is most of the contracts are in form of oral and not written this will occurs many problems to farmers in terms of legality of contracts.

Production contract specifies quality and quantity details of a special product. It also determines compensation for efforts of the producer. Contactor may provide all inputs to the farmer. Since contractor supervises the production rate and production operations, he intends to control the content and conditions of the contract.

In some cases, contracts of the contractor are concluded in marketing and details of the contract. For choosing which type of contract is needed, the contractor must mention the nature of product, goal of company and its operational field.

1.2 Problem Statement

Agriculture is a risk filled activity where all types of natural, social, economic and general risks are united together and make farmers vulnerable to revenue threats. Therefore, farmers are forced to make decision about allocation of resources and manufacture products under conditions and there is uncertainty about prices and yield of products. Since Iran has various climatic conditions like dry, temperate, cold and humid, creating risks and threats (such as drought, freezing weather, rainstorms, storms,) in the agricultural sector (Sadeghi, 2010). Iran is the tenth risk prone country in the world and a total of 31 out of 40 types of natural disasters which were recorded in the world have occurred in Iran. For this reason, if we add blights, animal and plant diseases to natural disasters of the country, we will see the extent to which agricultural production becomes a risky process. Natural disasters and geographical position of Iran has clarified risks affecting agricultural activities in Iran. Therefore, high risks in agricultural activities and manner of dealing with them have been considered by theorists of different fields of economics (Ahmad abadi, 2008). Then, it is necessary to apply effective means and strategies for supporting and providing economic security to the population active in the agricultural sector and as a result, increase production power and improve their living standards. This problem affects decision making process of the manufacturers. For this reason, reducing the transfer of risks to farmers has been considered and supported by many theorists, policymakers, planners and especially researchers. One of the most important policies is contract farming.

In Iran, movement toward contract farming has started considering risk nature of agriculture activities. But statistics and information in this field have indicated failure to achieve production goals of most crops in Iran. One of the products for which these contracts have been used is saffron. Saffron has a special importance and position in the agricultural sector as the most important and valuable export crop but results of the contracts related to this product show that farmers do not show a positive reaction to contracts. Such that more than 40% of farmers who have concluded contracts have revoked them in later stages (The Ministry of Agriculture Jihad (MAJ), 2011). Considering the importance of saffron in Iran's agriculture sector, benefits of marketing and farming of saffron as it is stated before and the role of contract farming in reducing risks and increasing productivity and improvements in the supply chain, have made contract farming a good solution to promote saffron farming in Iran. However, when 40% of saffron contract farmers have shifted toward independence, some questions arise surrounding certain uncertainties. The important issue is if contract farming is beneficial to the farmers why they prefer to be independent. Failure to recognize attitude of farmers toward contract farming and drawing up contracts improperly without understanding and recognizing the attitudes and perceptions of saffron cultivators can be one of the most important factors in terms of the success of the program in this situation. In other words, there is a need to look into saffron contract farming and find what has been proposed in these contracts and by analyzing them, recognize factors influencing farmers involved in contract farming, those who are not involved in contract farming, identification of perceptions and attitudes of saffron

farmers, comparing these three groups of farmers, and the effect of contract farming on saffron production and whether it can guarantee the success of agricultural contracts of saffron cultivators as well as providing an opportunity for more research in this section.

1.3 Research Questions

This study attempts to answer the following research questions.

1. Why saffron farmers participate in contract farming?
2. What are the determinants that may encourage saffron farmers to participate in contract farming?
3. Why saffron farmers do not participate in contract farming?
4. Why farmers cancel their contracts?
5. How the government can help to encourage more farmers to participate in contract farming?

1.4 Research Objective

The general objective of this study is to identify factors influencing farmers' participation in saffron contract farming in Iran.

The specific objectives are:

1. To investigate the differences in saffron farming practices among three groups of farmers based on their annual production, income and profit;
2. To explore the latent factors that may influence farmers to participate in contract farming; and,
3. To determine the extent to which demographic characteristics influence farmers' opinions on the effectiveness of contract farming.

1.5 Significance of the study

Economic crises in Iran in recent years due to the reduction in oil sales and consequently decreasing of foreign incomes have made progress of the economic development programs of the oil based economies to seriously become doubtful of their dependence on oil (Borhanzadeh & Hu, 2013). Therefore, to reduce vulnerability, it is necessary to achieve goals of economic development, expand non-oil exports and verify export revenues. Foreign trade of Iran is also recognized with a single export product and its dependency on oil for foreign exchange revenue is so that intensive fluctuations of revenues resulting from exports of crude oil, increase of population and more importantly exhaustibility of oil resources have inevitably necessitated non-oil export development to be one of the long-term goals of the country. To achieve this important goal, widespread attempts have been made to encourage non-oil export by resorting to different monetary, financial, commercial and foreign exchange policies. In this regard, Iran has to have developmental attitude toward agricultural economy and

trade as an inevitable necessity and should try to consider this section as one of the main centers of its economic development. Crops play a major role in non-oil exports in the country. Under proper climatic conditions, Iran has a high potential in agriculture. Saffron besides garden crops such as pistachios, dates and raisins could play a major role in the exports and increase foreign currency reserves as well as creating boosting employment rate in the country. The major saffron manufacturers in the world are Iran, Spain, India, China, Italy, Morocco, and Greece, among which Iran is the top manufacturer with 90% of global production and 80% of saffron exports are from Iran. But efficiency and productivity of supply the chain are low despite natural advantages for this product so that it suffers from a weakness in agricultural production and marketing and export process. Average yield per hectare is set at 10 kg for saffron around the world based on FAO data but this quantity is reduced to 4 kg in Iran (Ghahremani, 2011).

1.6 Organization of the study

This study contains six chapters. The first chapter states the back ground of the study and contract farming issues in Iran, general introduction of the thesis and discusses research elements. The second chapter describes agricultural economics and saffron industry in Iran. In the third chapter, the conceptual framework is developed and the theoretical framework is discussed. The fourth chapter includes the methodology used in this study. Moreover, the discussions in this chapter concentrate on the conceptual framework, data management, sampling procedure, and analysis carried out for the study. A detailed explanation of the various statistical procedures used for data analysis is also provided.

In the fifth chapter descriptive analysis, ANOVA, factor analysis, and multinomial logit analysis results are presented. The sixth chapter briefly discusses the important output of the thesis. Furthermore, conclusions from the measurement of the study are in this chapter, followed by an outline of recommendations and limitations for this study. The chapter ends with suggestions made for future research.

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