



Volume 9, Issue 2, 092505 (160-167)

Agricultural Marketing and Commercialization (AMC)



<https://doi.org/10.57647/j.amc.2025.090205>

Explaining the Inhibiting Factors of Contract Farming (Case Study: Boukan County)

Esmail Mohammad Amini, Loghman Rashidpour*^{ORCID}, Soleiman Rasouliazar

Department of Agriculture, Water, Food, and Nutraceuticals, Mah.C., Islamic Azad University, Mahabad, Iran.

*Corresponding author: rashidpour@iaau.ac.ir

Original Article

Received:
2025-07-22

Revised:
2025-10-18

Accepted:
2025-11-11

Published online:
2025-12-30

©2025 The Author(s). Published by the OICC Press under the terms of the CC BY 4.0, [Creative Commons Attribution License](https://creativecommons.org/licenses/by/4.0/), which permits use, distribution and reproduction in any medium, provided the original work is properly cited.

Abstract:

The main objective of the present study was to identify the inhibiting factors of contract farming, with a case study of Boukan County. This research was descriptive and survey-based, and in terms of purpose, it was applied. The statistical population consisted of 110 farmers who had entered into contracts under the contract farming scheme. Cluster sampling with proportional allocation was employed for sampling. Data analysis was conducted using factor analysis techniques with SPSS and Smart-PLS software. According to the results, the most significant inhibiting factors of contract farming, in order of importance, were: managerial barriers, economic barriers, technical and technological barriers, socio-cultural barriers, environmental barriers, and finally marketing barriers. The findings revealed that managerial and economic barriers were strongly confirmed, highlighting the critical role of management and economic support in hindering and preventing the achievement of contract farming objectives.

Keywords: Inhibiting factors, contract farming, Boukan

Cite this article: Mohammad Amini, E., Rashidpour, L., Rasouliazar S. (2025). Explaining the Inhibiting Factors of Contract Farming (Case Study: Boukan County). Agricultural Marketing and Commercialization, 9(2), 160-167.

INTRODUCTION

The importance of the agricultural sector in the economic development of every country, whether rich or poor, reflects the fact that agriculture is the primary sector of the economy and the provider of fundamental necessities of human life as well as other economic sectors. It plays a crucial role in the comprehensive development of a country (Sam Daliri et al., 2018).

Agricultural activities are inherently risky for farmers due to their interaction with uncontrollable natural forces and volatile, non-competitive markets. In these activities, various natural, social, and economic risks combine to create vulnerable conditions for producers. The consequence of

this fragility and vulnerability ultimately leads to income instability. Such instability is even more significant for smallholder farmers because this group, which constitutes a substantial portion of agricultural producers, has limited financial capacity. Moreover, these farmers invest all their assets in the production process, and even minor damages or losses during production can severely jeopardize their livelihoods (Golestanian et al., 2020).

Contract farming has been widely implemented in many countries, including developed nations such as the United States, as its benefits outweigh its drawbacks. This form of agriculture has a long history in developed countries and is increasingly gaining importance and recognition in developing countries as well.

Contract farming is broadly regarded as an effective tool to enhance the opportunities of smallholder farmers in less developed countries, as it facilitates their participation in intensive agricultural production and profitable export markets. Consequently, it integrates them into modern agricultural business practices (Douglas Ncube, 2020).

Agricultural contracts, which represent agreements between farmers and companies, are part of agricultural development policies. However, there is always concern about whether small-scale farmers can truly benefit from these arrangements, especially in regions where farmers operate on small plots of land. This factor often limits the ability of these farmers to enter into contracts. Nevertheless, contract farming is a targeted approach that can help increase farmers' incomes and improve profitability for financiers. With proper organization and effective management, contract farming can reduce risks and uncertainties for both parties compared to open market transactions of agricultural products (Mohammad Amini et al., 2024).

Critics of contract farming (outside Iran) often highlight the unequal power relations between farmers and investors. They argue that contract farming provides cheap labor and guaranteed market access for investors, while farmers are left with only a modest share of the sales revenue. In some cases, unequal contracts shift market risks disproportionately onto the farmers. It should be noted that the aforementioned critical perspective is practically at odds with what has occurred in various countries and the growing tendency of both farmers and investors to adopt this approach. Although the unequal position of the two parties in the contract is undeniable, the use of contract farming in many countries has led to guaranteed sales and increased mutual trust between farmers and investors. Today, agricultural contracts serve as an important tool in most countries worldwide to confront risks, provide farmers with peace of mind, and ensure product price stability. The use of this tool is especially increasing in developing countries. The expansion of contract farming is transforming the nature of agriculture through constructive interactions between farmers and contractual partners (Ghorbani et al., 2003).

Contract farming represents an intermediate form of vertical coordination that has developed in the private sector since the 1960s in response to the demand for high-quality products (Maertens & Swinnen, 2017). This type of farming typically emerges in situations characterized by high uncertainty and specific asset attributes—especially in the trade of products that are perishable, difficult to store and transport, and often exhibit heterogeneous quality (Minot & Sawyer, 2016).

Rural credit markets in developing countries frequently face challenges such as incomplete information and weak enforcement of loan repayment laws (Hoff & Stiglitz, 1993). For these reasons, commercial banks usually do not provide credit to small-scale producers, and in many cases, debt forgiveness programs have been implemented for state agricultural banks. In this context, informal institutions may have a competitive advantage in reducing transaction

costs (Besley, 1994).

Overall, based on the existing literature, the functions of contract farming include empowering farmers, increasing their income, creating employment, enhancing productivity, and producing healthy and organic products. However, contract farming also faces challenges such as poor contract enforcement, delayed or non-payment, issues with product quality standards, inefficient management by companies, environmental impacts of contract cultivation, weak provision of technical assistance, and incomplete delivery of farmers' produce to sponsors (Darkeh et al., 2021). Given the government's role in macroeconomic management and the extensive structures of ministries, as well as the multiple cultural and educational roles assigned to the media, it appears that the government must take effective actions in the education and promotion of contract farming.

Hosseiniabadi et al. (2022) found that contract farming of tomatoes in Kermanshah Province led to a 65% increase in yield and an 11% reduction in water consumption. Farmers consistently sold tomatoes to supporting companies at prices higher than the market rate. From the farmers' perspective, increased income per hectare was the key factor, while price control of raw materials was the main success factor for contract farming in the region.

Golestanian et al. (2020) showed that with increasing cultivated area, ownership, and education level, the likelihood of choosing the first to third types of contracts (compared to the fourth or basic contract) increased. Conversely, as crop diversity increased and farmers became more familiar with contract farming, the basic contract was preferred. Therefore, it is recommended that contracts prioritize farmers with smaller cultivated areas, more diverse crops, and lower education levels, since with proper control and supervision by the contracting party, productivity increases and smallholder farmers receive greater support.

Sam Deliri et al. (2018) demonstrated that the variable of farmer financing has a significant and positive effect on the acceptance rate of futures contracts. Therefore, it is essential that futures contracts be designed and localized in a way that, in addition to covering producers' price risks, also address their financial risks.

Karbasi and Naqavi (2013) found that since a 1% increase in the prices of rice, wheat, and corn in Asian countries results in a less than proportional increase in the supply of these products, the policy recommendation from their study is to formulate and implement specific pricing policies aimed at supporting and increasing the supply of staple grains in developing countries.

Abdollahi Ezzat Abadi (2005) showed that in futures contracts, farmers sell their products to the commodity exchange at a guaranteed price and in advance, before the harvest season.

Sakhi et al. (2020) estimated a multinomial logit model and found that variables related to marketing factors, the perceived market risk index for cotton, and risk aversion index have a positive and significant impact on the choice of consignment and forward contracts compared to cash

contracts. Conversely, variables such as farmers' education level, agricultural work experience, farm ownership type, cotton cultivation area, non-farm income, and precautionary savings have a negative and significant effect.

The scientific literature over recent years has predominantly emphasized the positive impacts of contract farming on family farms. Contractors facilitate access to improved inputs and provide technical advisory services, assisting producers in enhancing product quality (Reardon et al., 2009; Mishra et al., 2016). Such contracts lead to increased yields, higher farm-gate prices, and improved farmer incomes (Bellemare, 2017; Girma and Gardebroek, 2015; Maertens and Vande Velde, 2017).

Results showed that marketing contracts had no significant impact on producers' incomes. The technical programs used by producers with marketing contracts were similar to those employed by producers who obtained loans from the National Bank and sold their rice through cash transactions, as both methods were promoted by the National Agricultural Organization. Moreover, no price premiums existed because the quality of rice sold by contract producers and those selling through cash transactions was the same. Therefore, marketing contracts did not improve producers' status; rather, they functioned as an organizational tool ensuring that producers repaid their loans while millers received their required products. However, this type of contract reduced producers' food insecurity by somewhat mitigating seasonal price fluctuations. Producers sold their rice within two months after harvest to repay their loans, during which the contract price was higher than the cash market price (Soullier and Moustier, 2018).

The advantages, challenges, and disadvantages of contract farming are directly linked to environmental conditions, economic status, market conditions, and even the physical circumstances of farmers. Certainly, the balanced distribution of risk between farmers and investors is related to economic conditions and the quality of the products (raw or processed). Furthermore, the level of farmers' skills and knowledge plays a decisive role in this regard.

The main issue lies in the weak position of farmers within contractual arrangements—both in developed and developing countries—commonly referred to as the “bargaining problem.” Contract farming is not a comprehensive or complete solution to all problems related to agricultural production and marketing systems (Rehber and Zwick, 2019).

Farmers' access to markets, regardless of investors' access, is a crucial determining factor. These factors effectively define the technical information of the contract, and the inequality in the positions of farmers and investors within contracts stems from these issues. Therefore, by empowering farmers, relative equality in contracts can be achieved; however, it should not be forgotten that in all commercial and contractual fields, the party that provides capital, guarantees product sales, has market access, and supplies technical knowledge and technology to the other party will always hold the upper hand (Mohammad Amini et al., 2024).

Although the adoption of the contract farming model in

Iran is relatively recent, key sectors such as sugar and cotton industries, oilseeds, the poultry meat supply chain, and the comprehensive integrated raw milk management plan are considered pioneers in implementing this progressive agricultural approach. Since the early days of the thirteenth government, the Ministry of Agriculture Jihad has placed special emphasis on the necessity of expanding contract farming, presenting it as a decisive strategy to prevent corruption and losses in agricultural products, combat middlemen and intermediaries, and increase farmers' incomes. The ministry has strongly emphasized its widespread implementation.

The objectives and achievements of contract farming include financing (initial costs) for contract units, providing necessary inputs, offering services such as training, supervising the production process by experienced experts, providing transportation services, purchasing products, facilitating access to global markets, cutting off intermediaries and hoarders, and ultimately increasing the competitiveness of production and export enterprises.

A task force chaired by the Deputy of Planning and Economics and secretariat of the Economic Affairs Office of the Ministry of Agriculture Jihad was established. The task force includes representatives from banks and financial institutions, the Agricultural Engineering and Natural Resources Organization, the Agriculture Commission of the Iran Chamber of Commerce, Industries, Mines and Agriculture, the Trade Development Deputy, several successful companies in the field of contract farming, and other ministries and organizations such as the Ministries of Cooperatives, Labor and Social Welfare, Industry, Mining and Trade, and Economic Affairs and Finance, as relevant. This group is responsible for policy-making, planning, implementation, and supervision of the advancement of contract farming.

This raises the question: why are farmers reluctant to sell their wheat to government silos? The answer is clear—the government's guaranteed purchase price for wheat is low. Therefore, the government must annually raise the guaranteed prices of wheat and other agricultural products to a reasonable level so that farmers are encouraged both to engage in contract farming and to supply their products to the government at guaranteed prices. Boukan is recognized as one of the leading counties in wheat production in the country, both quantitatively and qualitatively, with an annual production capacity of 90,000 tons of wheat, ranking first in wheat production in West Azerbaijan Province. The main agricultural products of Boukan County include wheat, barley, cotton, legumes, and sugar beet. Its horticultural products include apples, peaches, apricots, sour cherries, cucumbers, and more. Due to its abundant and lush pastures, livestock farming of sheep, goats, and calves is widespread (Iran Statistical Center, 2016).

Given the agricultural production potential, Boukan County was one of the pioneering regions in implementing contract farming schemes initiated by the current (thirteenth) government. Therefore, the aim of this study is to identify and explain the inhibiting factors of contract farming in

this county to determine the obstacles encountered during the four-year implementation period of the program.

RESEARCH METHODOLOGY

This study is descriptive-survey in nature and, in terms of its objective, classified as applied research. It examines the inhibiting and facilitating factors of contract farming in Boukan County. Regarding data collection, the present research is a field study, and the data were gathered using a researcher-designed questionnaire.

The statistical population of this study consisted of all farmers who had entered into contracts under the contract farming scheme, totaling 110 farmers with 1,800 hectares of cultivated land. Using the Krejcie and Morgan table, the sample size was determined to be 110 individuals. Due to the limited number of contracted farmers, the census (complete enumeration) method was used for sampling. In the theoretical framework analysis, a documentary research method was employed through a review of scientific databases. In the field section, data were collected using a researcher-made questionnaire. The content validity of the questionnaire was confirmed by consulting with the supervising and advising professors as well as several experts from the Agricultural Jihad Organization. The reliability of the questionnaire was assessed using Cronbach’s alpha coefficient, which was calculated as $\alpha = 0.73$ for the questionnaire’s scales. For data analysis, descriptive statistics such as frequency distribution, cumulative, mean, and coefficient of variation were used, along with inferential statistics including confirmatory factor analysis (CFA). The analysis was conducted using SPSS and Smart PLS software.

RESULTS

Descriptive statistics for the main variables in the sample revealed that 82.7 % of respondents were men, while 17.3 % were women. The average age of the respondents was

45.8 years, with a minimum of 29 years and a maximum of 65 years.

Regarding educational attainment, the frequency distribution showed that the largest group—40.4 %—had less than a high-school diploma, whereas the smallest group—25.16 %—possessed education beyond a bachelor’s degree. The distribution of respondents by type of contract-farmed crop (Table 1) indicated that wheat was the most widely cultivated contract crop.

To explain the factors influencing the sustainability of the horticulture sector and to determine the amount of variance explained by each variable in the form of influencing components, factor analysis was conducted. The results of the Kaiser-Meyer-Olkin (KMO) test in this study showed a KMO value of 0.841, and the result of the Bartlett’s Test of Sphericity was Chi-square = 2106.111, which was significant at the 1% level. These results indicate that the data were suitable for performing factor analysis.

Confirmatory Factor Analysis (CFA)

After ensuring the adequacy of the sample size, Confirmatory Factor Analysis (CFA) was conducted using the measurement model in SmartPLS software. The results are presented in Table 2 , detailing the indicators (items) associated with each construct.

To assess the effects of the independent variables on the dependent variable, a structural model was implemented. Table 3 presents the results of the structural model used to test the inhibiting factors of contract farming. According to the values reported in this table, all factors are statistically significant at the 95% confidence level. Moreover, the path coefficients indicate the direct effect of these factors. Based on the coefficient of determination obtained from the software, the inhibiting factors of contract farming in Boukan County can be prioritized according to their level of importance, as presented in the table below (Table 4).

Table 1. Frequency Distribution of Respondents Based on Descriptive Variables

Age (years)	Mean	Minimum	Maximum	
	48.8	29	65	
Education Level	Below Diploma	Diploma	Associate Degree	Bachelor’s Degree and Above
	26.2	40.2	18.8	15.6
Work Experience in Agriculture (years)	Mean	Minimum	Maximum	
	23	14	50	
Land Ownership Status	Owner	Leaseholder	Company-Owned	
	56.9	35.7	7.4	
Type of Contract-Farmed Crops	Wheat	Barley	Others	
	46.4	26.4	27.2	

Source: Research Findings

Table 2. Factor Loadings of Inhibiting Factors of Contract Farming in Boukan County

Factors	Inhibiting	Factor Loadings
	Socio-Cultural Barriers	
	Lack of trust among farmers	0.896
	Lack of decision-making independence	0.931
Socio-Cultural Barriers	Feeling of dependency	0.944
	Lack of cooperation among farmers	0.940
	Lack of participation and teamwork	0.953
	High average age of beneficiaries	0.936
	Fear of failing to support family needs	0.931
	High input costs for contract farming	0.938
	High land rent and other input costs	0.944
	Low price of contract-farmed products	0.945
	Improper use of production factors	0.950
	Lack of supportive credit for contract farming	0.962
	Capital-intensive nature of contract farming	0.936
	Low income from agriculture	0.681
Economic Barriers	Managerial Barriers	
	Poor managerial skills	0.945
	Lack of adequate technical knowledge	0.929
	Burdensome policies and regulations	0.899
	Lack of government commitment to support promises	0.908
	Uncoordinated planning	0.947
	Ignoring principles of sustainable farming	0.927
	Limited variety of contract-farmed products	0.942
	Inadequate government support and poor policy development	0.729
	Limited product sales opportunities	0.890
	Limited market access	0.922
Marketing Barriers	Weak rural transportation networks	0.920
	Delay in receiving payment for products	0.825
	Lack of product storage facilities	0.907
	Limited product sales opportunities (duplicate)	0.914
	Climate change	0.959
	Pests and diseases	0.960
Environmental Barriers	Product waste	0.939
	Incompatibility of contract crop varieties with local conditions	0.922
	Drought	0.800
	Need for sufficient knowledge and expertise	0.922
	Limited access to information and modern technology	0.804
Technological Barriers	Lack of access to modern irrigation technologies	0.936
	Lack of agro-industrial processing facilities	0.937
	Low level of mechanization	0.935

Table 3. Significance of Inhibiting Factors of Contract Farming in Boukan County

Inhibiting Factors of Contract Farming	Path Coefficient	t-value	Significance Level
Socio-Cultural Inhibiting Factors	0.960	104.487	0.000
Economic Inhibiting Factors	0.982	209.834	0.000
Marketing Inhibiting Factors	0.920	40.143	0.000
Environmental Inhibiting Factors	0.959	95.311	0.000
Technical and Technological Inhibiting Factors	0.960	114.685	0.000
Managerial Inhibiting Factors	0.985	270.312	0.000

Table 4. Prioritization of Inhibiting Factors of Contract Farming in Boukan County Based on Coefficient of Determination

Endogenous Variable	Coefficient of Determination
Managerial Inhibiting Factors	0.969
Economic Inhibiting Factors	0.964
Technical and Technological Inhibiting Factors	0.922
Socio-Cultural Inhibiting Factors	0.921
Environmental Inhibiting Factors	0.919
Marketing Inhibiting Factors	0.845

RESULT AND DISCUSSION:

This study investigated the inhibiting factors of contract farming. Based on the findings, considering the average age of the farmers, it can be stated that the contract farming sector—due to multiple risks, the difficulty of the work, and unstable agricultural policies—tends to attract relatively younger farmers. While this may appear to be a positive aspect, it poses a risk: if trust is compromised, the continuity of this program may be jeopardized. In other words, a lack of trust among the younger workforce in this sector reduces their willingness to take risks and adopt innovative agricultural methods, which could negatively affect long-term outcomes. The results also indicated that the farmers in the study area possess a relatively adequate level of education, which is considered a significant factor for the sustainable outlook of contract farming.

The results obtained from the factor analysis confirmed, at a high level, the identification of the inhibiting factors including managerial, economic, technical and technological, socio-cultural, environmental, and marketing barriers. The findings revealed that managerial and economic barriers were strongly confirmed, highlighting the critical role of management and economic support in hindering the advancement of contract farming objectives. The analysis indicated that managerial factors are the primary inhibiting factor in the development of contract farming in Boukan County. These findings are consistent with the studies of Shabanali Fami et al. (2014) and Darkeh (2021). The absence of clear and stable policies to support contract farming has led to mistrust among

farmers and purchasing companies. Furthermore, the lack of strong legal frameworks to bind both parties to fulfill their contractual obligations has increased the risk for both farmers and companies. The lack of robust supervisory institutions for monitoring and enforcing contracts has resulted in potential exploitation by certain companies or farmers. Additionally, weak collaboration between governmental organizations (such as the Agricultural Jihad Organization) and private companies creates confusion for farmers during the implementation process of contract farming. Complicated administrative regulations have also made the contract formulation process difficult and time-consuming.

The role of economic inhibiting factors in contract farming was confirmed at a high level. This finding is supported by the studies of Hosseinabadi et al. (2022) and Douglas (2020). Economic barriers have had a significant impact on contract farming in Boukan County. Sharp fluctuations in product prices have led to farmers’ distrust in contract farming. Many farmers lack sufficient capital to purchase agricultural inputs, machinery, and upgrade production technologies. As a result, entering into contract farming, which often requires initial investment, becomes difficult for them. Limited access to affordable loans with low interest rates and easy repayment terms is one of the main economic obstacles. Many banks are also reluctant to provide loans to farmers due to insufficient collateral. The rising prices of agricultural inputs such as seeds, fertilizers, pesticides, and fuel have increased production costs and reduced the profitability of contract farming. Under such circumstances, if the contracts lack proper insurance coverage, farmers are less inclined to accept

them. Furthermore, the absence of financial incentives, support subsidies, and guaranteed pricing policies reduces farmers' motivation to engage in contract farming.

The impact of technical and technological inhibiting factors on contract farming in Boukan County was confirmed as the third most significant factor. The findings are consistent with the studies of Nasrnia & Bakhshoudeh (2011) and Shabanali Fami et al. (2009). Low levels of support for agricultural mechanization and the continued use of traditional methods in planting, cultivation, and harvesting have reduced productivity and increased production costs. The improper distribution of standard seeds has negatively affected both the quality and quantity of production, discouraging farmers from participating in guaranteed contract schemes. The lack of modern irrigation equipment has decreased water-use efficiency and increased irrigation costs. Additionally, some farmers, due to the high cost or scarcity of high-quality fertilizers and pesticides, resort to using cheap and substandard inputs, which can lower the overall quality of the final product.

The results indicated that certain social and cultural factors have also played an inhibiting role in the development of contract farming in Boukan County. These findings are consistent with the studies of Hosseinabadi et al. (2022) and Bellemare and Novak (2017). The data revealed that farmers often avoid engaging in contract farming due to a lack of trust in contracting companies. Past negative experiences and a lack of transparency in contractual terms have diminished farmers' willingness to cooperate. Additionally, some farmers may fear that participation in contract farming could lead to overdependence on purchasing companies, thereby threatening their economic independence.

Environmental inhibiting factors have played a significant role in contract farming in Boukan County due to the region's harsh and fragile environmental conditions. These findings are consistent with the studies conducted by Mahmoudi and Karbasi (2019) and Mishra et al. (2016). Boukan County has been facing a decline in water resources, including drying rivers and springs, as well as a reduction in groundwater levels. These water limitations have hindered farmers' ability to fulfill their contractual obligations effectively. Unpredictable climate changes have further increased the risks associated with executing agricultural contracts. Overexploitation of agricultural lands, improper crop rotation practices, and excessive use of chemical fertilizers and pesticides have led to decreased productivity and adversely affected the efficiency of contract farming in the region.

Marketing inhibiting factors represent another significant barrier to contract farming in Boukan County. The findings align with the study by Azhang (2024). Due to the distance from purchasing centers, farmers in Boukan face considerable challenges in selling their products. They are often compelled to sell their produce to intermediaries at low prices. These intermediaries frequently control product prices and discourage farmers from entering into long-term contracts. Sharp fluctuations in product prices have led to farmers' distrust of contract farming. Additionally,

inadequate road infrastructure and high transportation costs to contractual purchasing centers increase the final cost of agricultural products, creating a major obstacle to the development of contract farming in the region.

Based on the study's findings, it is recommended that management policies for contract farming be evaluated and revised to enhance trust-building and effectiveness. To address economic barriers, the pricing mechanisms for agricultural products and inputs should be aligned with market realities. Furthermore, technical and technological support should be expanded, and the market for contract farming products should be better organized to reduce the influence of intermediaries.

Authors contribution

All the authors have participated sufficiently in the intellectual content, conception and design of this work or the analysis and interpretation of the data (when applicable), as well as the writing of the manuscript.

Availability of data and materials

The data that support the findings of this study are available from the corresponding author, upon reasonable request.

Conflict of interest

The authors state that there is no conflict of interest.

REFERENCES

- Azhang, M. R. (2024). Investigating the Impact of Contract Farming on the Competitive Advantage of Agricultural Product Marketing in Iran. The 8th International Conference on Management, Accounting, and Economics in Sustainable Development, Mashhad.
- Darakeh, M., Zarafshani, K., & Sharafi, L. (2021). Functions and Challenges of Contract Farming in Kermanshah Province. *Rural Research*, 12(2), pp. 258–273.
- Rostami, F., Shabanali Fami, H., Movahed Mohammadi, H., and Irvani, H. (2005). Wheat Production Risk Management in Family Farming Systems: A Case Study of Harsin County. *Iranian Journal of Agricultural Sciences*, 37(1), pp. 93–106.
- Sam Daliri, K., Hoseini Yekani, S. A., & Mojaverian, S. M. (2018). Factors Affecting the Adoption of Agricultural Futures Contracts (A Case Study of Rice Farmers in Sari County). *Agricultural Economics and Development*, 26(102).
- Sakhi, F., Mohammadi, H., & Fattahi Ardekani, A. (2020). Factors Influencing the Type of Agricultural Product Sales Contracts (Case Study: Cotton Production in Gonbad-e Kavus County). *Agricultural Economics Research*, 12(1), pp. 1–24.
- Abdollahi Ezzatabadi, M. (2005). Strategies for Introducing Spot and Option Contracts in the Agricultural Commodity Exchange Market in Iran: A Case Study of Pistachio. *Iranian Agricultural Economics Conference*.
- Ghorbani, M., Dehghanian, S., & Firoozzare', A. (2004). Socio-Economic Factors Affecting Beet Growers' Contracts with Sugar Factories in North Khorasan Province. *Agricultural Science and Industries*, 18(2), pp. 205–213.
- Karbasi, A., & Naqavi, S. (2013). Supply Elasticity in Response to Price Changes of Agricultural Products in Selected Asian Countries. *Journal of Agricultural Economics*, 7(1), pp. 1–14.
- Golestanian, M., Nabyian, S., & Mirzaei Khalilabadi, H. R. (2020). Factors Affecting the Choice of Agricultural Contracts from the Perspective of Farmers in Bardsir County: A Mixed Logit Approach. *Iranian Journal of Agricultural Economics and Development Research (Iranian Agricultural Sciences)*, 51(2), pp. 266–278.
- Mohammad Amini, A., Rashidpour, L., & Rasouli Azar, S. (2024). Explaining the Inhibiting and Promoting Factors of Contract Farming (Case Study: Boukan County). Master's Thesis in Agricultural Management, Islamic Azad University, Mahabad Branch.
- Mahmoudi, M., & Karbasi, A. (2019). Investigation of Factors Affecting

- the Conclusion and Implementation of Agricultural Contracts (Switching Regression Approach). *Agricultural Economics (Economics and Agriculture)*, 13(3), pp. 133–168.
- Statistical Center of Iran. (2016). Detailed Results of the General Agricultural Census: West Azerbaijan Province. Agricultural Report.
- Nasarnia, F., & Bakhshoudeh, M. (2011). A Study of Cooperation Contracts among Rural Households in Crop Production in Firuzabad Plain. *Economics and Agricultural Development*, 25(3).
- Eaton, C., & Shepherd, A. W. (2001). Contract farming: Partnership for growth (FAO Agricultural Services Bulletin No. 145). Rome, Italy: Food and Agriculture Organization (FAO).
- Douglas, N. (2020). The importance of contract farming to small-scale farmers in Africa and the implications for policy: A review scenario. *The Open Agriculture Journal*, 14, 59–86. <https://doi.org/10.2174/1874331502014010059>
- Rehber, E., & Zwick, C. J. (2019). Contract farming in practice: An overview. <https://doi.org/10.13140/RG.2.2.35941.04325>
- Besley, T. (1994). How do market failures justify interventions in rural credit markets? *The World Bank Research Observer*, 9(1), 27–47. <https://doi.org/10.1093/wbro/9.1.27>
- Bolwig, S., Gibbon, P., & Jones, S. (2009). The economics of smallholder organic contract farming in tropical Africa. *World Development*, 37(6), 1094–1104. <https://doi.org/10.1016/j.worlddev.2008.09.012>
- Hoff, K., & Stiglitz, J. (1993). Imperfect information and rural credit markets. In J. Stiglitz & T. Schultz (Eds.), *The economics of rural organization: Theory, practice, and policy* (pp. 33–52). Oxford University Press.
- Reardon, T., Barrett, C., Berdegue, J., & Swinnen, J. (2009). Agrifood industry transformation and small farmers in developing countries. *World Development*, 37(11), 1717–1727. <https://doi.org/10.1016/j.worlddev.2008.08.023>
- Mishra, A., Kumar, A., Joshi, P., & D'Souza, A. (2016). Impact of contracts in high yielding varieties seed production on profits and yield: The case of Nepal. *Food Policy*, 62, 110–121. <https://doi.org/10.1016/j.foodpol.2016.05.005>
- Maertens, M., & Vande Velde, K. (2017). Contract-farming in staple food chains: The case of rice in Benin. *World Development*, 95, 73–87. <https://doi.org/10.1016/j.worlddev.2017.02.011>
- Girma, J., & Gardebroek, C. (2015). The impact of contracts on organic honey producers' incomes in southwestern Ethiopia. *Forest Policy and Economics*, 50, 259–268. <https://doi.org/10.1016/j.forpol.2014.08.001>
- Bellemare, M., & Novak, L. (2017). Contract farming and food security. *American Journal of Agricultural Economics*, 99(2), 357–378. <https://doi.org/10.1093/ajae/aaw053>
- Soullier, A., & Moustier, D. (2018). Impacts of contract farming in domestic grain chains on farmer income and food insecurity: Contrasted evidence from Senegal. *Food Policy*, 79, 179–198.
- Swinnen, J., & Maertens, M. (2007). Globalization, privatization, and vertical coordination in food value chains in developing and transition countries. *Agricultural Economics*, 37(s1), 89–102. <https://doi.org/10.1111/j.1574-0862.2007.00237.x>