# Exploring the determinants of contract farming participation among farmers in Kosovo: an empirical analysis

**Shyhrete Muriqi**
Faculty of Agribusiness,
University "Haxhi Zeka" Pejë,
Kosovo

**Zsolt Baranyai**
Metropolitan University,
Hungary

**Maria Fekete-Farkas**
Institute of Agricultural and
Food Economics,
Hungarian University of
Agriculture and Life Sciences,
Hungary

**Prespa Ymeri**
(corresponding author)
Faculty of Agriculture and
Veterinary Science,
University of Prishtina,
Prishtina, Kosovo
Email: prespa.ymeri@uni-pr.edu

Contract farming is a widely recognized mechanism for addressing market access constraints faced by smallholder farmers and promoting rural development. This study investigates the determinants influencing farmers' participation in contract farming in Kosovo. Data were collected from 249 farm households selected randomly for the study, and binary logistic regression analysis was used to identify the determinants of farmers' decisions to participate in contract farming. The results reveal a substantial positive association ($p < 0.05$) between farmers' location and engagement in contract farming, indicating that rural regions have 3.661 times higher odds to participate than urban areas. Moreover, cooperation among farmers significantly influences contract farming participation ($p < 0.05$), showing 3,755 times higher odds for contract farming engagements. This type of farming demonstrates positive significance ($p < 0.05$), with vegetable producers being 3.664 times more likely to join contract farming compared to cereal producers. Conversely, mixed farms exhibit a significant negative relationship ($p < 0.05$) in contract farming. Gender, age, education, trust, and size of farms were found to be non-significant predictors ($p > 0.05$) in entering contract farming. Additionally, a statistically significant difference in income emerged between contract and non-contract farmers ($p < 0.05$). Specifically, contract farmers exhibited higher income levels than non-contract farmers. These results highlight the potential for contract farming as an alternative approach to rural development, which policymakers may consider for implementtation, given that contextual factors are properly taken into account.

**Keywords:**
CF, willingness, sociodemographic, economic factors

## Introduction

Agriculture plays a pivotal role in Kosovo's economy, contributing approximately 6.9% to the country's GDP (MAFRD 2022). This sector is emphasized in the national policy program, the Agriculture and Rural Development Program (ARDP), implemented by MAFRD. The ARDP guides the development of the agricultural and rural development sector in Kosovo towards modernization and EU approximation (MAFRD 2021). Therefore, the quality of the relationship between farmers and buyers, the significance of contract farming, and trading conflicts have become key focuses for researchers and policymakers.

Contract farming has been in existence for decades and has been a subject of discussion and debate, particularly in developing and transitional nations (Meemken–Bellemare 2020, Miyata et al. 2009, Morrissy 1974). Contract farming has been extensively studied in the international literature as a potential tool for improving social welfare (Arouna et al. 2019, Bellemare–Bloem 2018, Hoang 2021, Otsuka et al. 2016, Ton et al. 2018), farmer incomes (Kanana 2019, Khan et al. 2019, Maertens–Vande Velde 2017, Miyata et al. 2009) and long-term sustainability (Hoang 2021). The literature has also identified several sociodemographic and economic factors that influence farmers' decisions to join contract farming. Among the sociodemographic factors, gender, education, land size, family size, farmer group or cooperative membership, agricultural extension, experience, trust, and access to irrigation facilities have been found to play a significant role (Aazami et al. 2011, Bellemare 2012, Bezabeh et al. 2020, Hoang–Nguyen 2023, Kanana 2019, Loquias et al. 2021, Muroiwa 2019, Ni'mah–Irham 2023, Nugussie 2009, Rondhi et al. 2020, Simmons et al. 2005, Swain 2012). From an economic perspective, farmers with a contract typically benefit from access to the market, credit, higher yields and income (Hoang–Nguyen 2023, Loquias et al. 2021, Marwa–Manda 2022, Ruml et al. 2022, Wang et al. 2014). Given the potential benefits of contract farming, policy support for this practice has increased in recent years. However, it is important to consider the context of each country or region and the specific factors that may affect the success of contract farming initiatives.

In Kosovo, contract farming is not commonly practised, and its prevalence varies depending on the scale of operation and the sector involved (Gjokaj et al. 2017). According to a recent study conducted by Muriqi et al. (2021), it was observed that the majority of farmers in Kosovo do not engage in formal contractual agreements for the sale of their agricultural products. Instead, they tend to choose selling channels that offer higher incomes once their products are ready for the market. However, this approach has resulted in a significant number of small farmers selling their products at prices below the production cost or even discarding them, as they are unable to find a market for them. The study further found that farmers who are part of cooperatives typically sell most of their produce through wholesale traders. One of the most significant obstacles faced by farmers in selling their products is the lack of

a guaranteed contract (Ymeri et al. 2020). Due to their limited negotiating skills, smallholders primarily rely on private customers and door-to-door sales as their main market. In the agricultural sector, short-term contracts with collection centres are the most common form of formal agreement, while the horticulture sector is dominated by informal contracts between farmers and buyers (Gjokaj et al. 2017). Farmers have reported signing contracts without specifying payment dates, leading to a limited interest in formalized, contract-based sales channels and skepticism towards such arrangements. Consequently, smallholders experience individualization and high transaction costs in production and marketing, resulting in low productivity and high risks (Herzfeld 2021). In a country where agriculture has a significant impact on GDP, the importance of contract farming cannot be understated. However, little is known about the factors that motivate or hinder farmers' participation in contract farming in this context. As a result, there is a need to gain a better understanding of the benefits of contract farming and the factors that influence smallholders' participation in such arrangements. Addressing these research gaps, this pioneering research aims to identify the socioeconomic factors that shape the decision to engage in contract farming. By doing so, this study contributes to the understanding of the drivers and barriers to contract farming adoption among smallholder farmers and provides insights for designing tailored interventions that can improve the effectiveness and sustainability of this production system.

This paper is organized into three main sections, beginning with an introduction. The second one outlines the methods and procedures utilized in the study, while the third section presents the analysis and results. Finally, the conclusion summarizes the key findings of the study.

## Material and methods

### Study area

The research is conducted in Kosovo, a country with an expanse of 10,887 km². The geographical configuration includes the Dukagjini Region (Peje, Prizren, Rahovec, Gjakove, and Deçan) in the west and the Kosovo Region (Prishtine, Ferizaj, Gjilan, Mitrovice, and Drenas) in the east. Situated within the Balkan Peninsula, Kosovo shares its borders with Macedonia, Albania, Montenegro, and Serbia. The climate in Kosovo is continental, with temperatures ranging from –20 °C in winter to +35 °C in summer. This climatic diversity significantly influences agricultural practices and productivity. The Dukagjini Region, situated in the western part of Kosovo, is particularly suited for labour-intensive horticulture. It features fertile land and small rivers that contribute to a diverse spectrum of agricultural activities, engaging a community of 54,249 farmers. In contrast, the Kosovo Region in the eastern part, encompassing Prishtine, Ferizaj, Gjilan, Mitrovice, and Drenas, accommodates a larger population of 76,526 farmers. However, it faces challenges such as inferior

climatic conditions and a higher concentration of non-agricultural activities, particularly in urban areas, as reported by European Fund for Southeast Europe (EFSE) in 2013.

## Data collection

The present study aims to investigate the determinants of farmers' readiness to participate in contract farming in Kosovo. To collect primary data, a structured questionnaire was employed using the random sampling technique, resulting in a sample size of 249 farm households. Given the limited internet literacy among farmers, the questionnaires were administered in person and completed by hand. The researcher conducted face-to-face interviews with the respondents, either at their homes or workplaces. Before starting the interview, the participants were briefed on the study's nature and objectives and assured that the data would be used solely for academic research purposes. It is noteworthy that the data collection methods used are statistically representative at the national level. The sample adequacy test confirmed that the sample size used in the study is sufficient at a 95% confidence level with a margin of error of 6.3%.

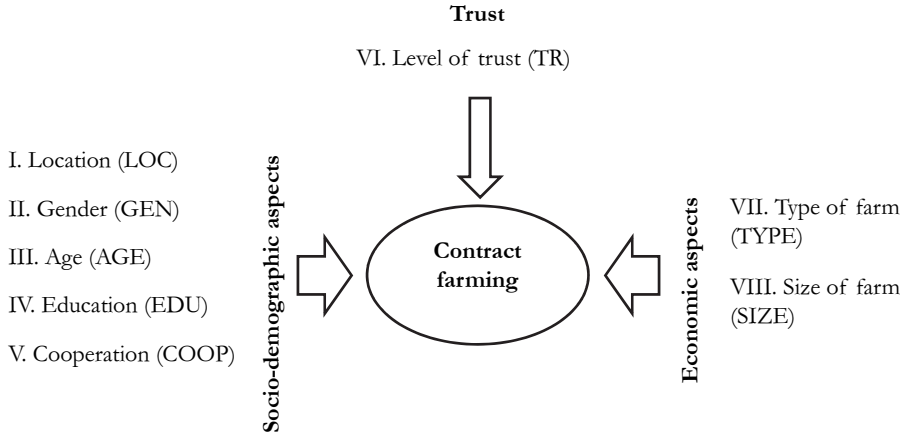
## Data analysis

The study employed binary logistic regression to analyse the sociodemographic and economic factors that influence farmers' readiness to join contract farming in Kosovo. This statistical technique was utilized to determine the level of contract farming and the farmers' willingness to participate in it. Similar analyses have been conducted in previous studies, including those conducted by (Baranyai et al. 2018, Muriqi et al. 2019, Ni'mah–Irham 2023, Papp-Vary et al. 2019, Taslim et al. 2021, Ymeri et al. 2020).

The sociodemographic factors that were examined in this study included cooperation, gender, age, education level, and farming experience. The economic factors that were analysed included the type of farming and other related variables, as illustrated in Figure 1.

Figure 1

The logical model of the examinations




The variables (X–independent variables) impacting contract farming in agriculture, as well as the outcomes (Y–dependent variables), might be measured using this model. The regression model is as follows:

$$Yi = \beta 1 + \beta 2Xi + ui(1)$$

The formula for the analysis is as follows:

$$Y = \beta 0 + \beta 1\ LOCATION + \beta 2\ GENDER + \beta 3\ AGE + \beta 4\ EDUCATION\ LEVEL + \beta 5\ COOPERATION\ ACTIVITY + \beta 6\ TRUST + \beta 7\ TYPE\ OF\ FARMING + \beta 8\ SIZE\ FARM\ + ui(1)$$

When using logistic regression models, Barna–Székelyi (2004) note that if a model has too many independent variables, the total R-squared value would be inflated. To avoid this, they suggest measuring explanatory power using the following formula:

$$R^2_{LA} = \sqrt{\frac{G_M - 2k}{D_0}} \quad \text{where}$$

GM is the deviation chi-square, k denotes the number of independent variables in the model;

$$D_0 = -2\left\{(n_{Y=1})\ln\left[P(Y=1\right] + (n_{Y=0})\ln\left[P(Y=0\right]\right\} \text{and,}$$

in which nY=1 denotes the frequency of the occurrence of cooperation as an event; P(Y = 1) means the probability of the occurrence of the same event; nY=0 and P(Y = 0) marks the frequency and probability of the non-occurrence of cooperation. The value obtained is also in the range from 0 to 1, with 0 indicating that the independent variables included in the model do not contribute to the prediction of the dependent variable's value and 1 representing a clear determination.

The independent sample t test was employed to examine the income disparities between farmers who participated in contract farming and those who did not. This

test enabled the comparison of the means of two independent samples and the identification of any significant differences between them (Kulkarni 2016).

## Results and discussion

In terms of socioeconomic characteristics influencing the desire to join contract farming, the results (Table 1) revealed that more than three-quarters of the farmers in the sample (73.3%) were from rural and minor regions, while 27.7% came from urban areas. Males manage the majority of the farms (94.4%), while females manage a minority of the farms (5.6%). In terms of age, 58% of the farmers were between the ages of 14 and 49, while the rest were over 50. Over three-quarters of farmers had completed secondary education, with the remainder having completed university. When questioned about their faith in farmer cooperation, the majority of respondents (65.5%) do, a small percentage (19.2%) do not, and the rest (15.3%) do not agree or disagree.

Table 1

**Farmers' basic characteristics on participation in contract farming**

| Factor | Category | Frequency | % |
|---|---|---|---|
| I. Location | urban | 69 | 27.7 |
| | rural | 180 | 73.3 |
| II. Gender | male | 235 | 94.4 |
| | female | 14 | 5.6 |
| III. Age | 14–49 | 146 | 58.6 |
| | 50–80 | 103 | 41.4 |
| IV. Education level | university | 51 | 20.5 |
| | primary/higher school | 198 | 79.5 |
| V. Trust | Likert scale (1–5) | | |
| | 1) I don't agree at all | 24 | 9.6 |
| | 2) I don't agree | 24 | 9.6 |
| | 3) I don't agree or disagree | 38 | 15.3 |
| | 4) I agree | 117 | 47.0 |
| | 5) I agree at all | 46 | 18.5 |
| VI. Cooperation activity | yes | 45 | 18.1 |
| | no | 204 | 81.9 |
| VII. Type of farming | cereals | 36 | 14.5 |
| | vegetable | 93 | 37.3 |
| | mix farms | 120 | 48.2 |
| VIII. Size farm | 0.01–5.00 | 162 | 65.1 |
| | 5.01–10.00 | 51 | 20.5 |
| | 10.01–20.00 | 24 | 9.6 |
| | 20.01–70.00 | 12 | 4.8 |

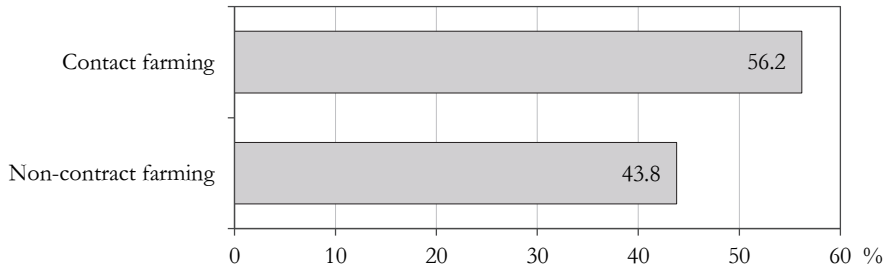
The survey results (Table 1) indicate that the majority of farmers in the sample (81.9%) do not engage in any form of formal or informal cooperation with other

farmers. Additionally, almost half of the respondents (48.2%) reported operating mixed farms, while 37.3% and 14.5% reported operating vegetable and cereal farms, respectively. With respect to land area, the majority of wheat farmers (85.6%) had small farms of 0.01–10 ha, whereas a minority (14.4%) had farms of 10–70 ha.

The study found that the overall prevalence of contract farming in Kosovo is relatively low. The farmers were classified into two groups: those who practice contract farming and those who do not. The majority of farmers (56.2%) reported that they engage in contract farming, while the remaining farmers (43.8%) did not. The respondents expressed their preference for contract farming for products that are exported outside of Kosovo, as the contract is more feasible in such cases, as indicated by the farm leaders.

Figure 2

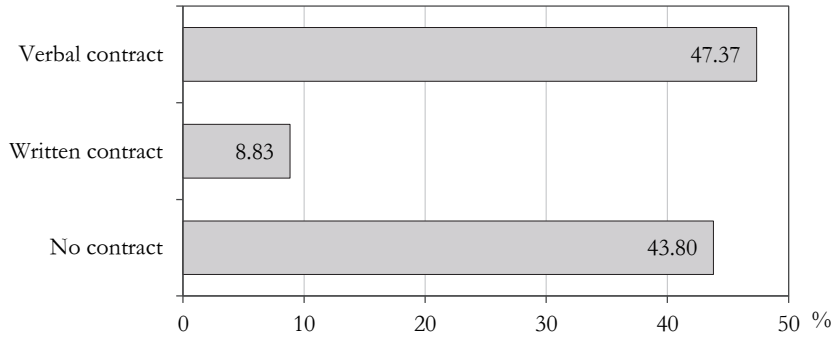
General level of contract farming in Kosovo agriculture




The findings presented in Figure 3 highlight the types of contracts reported by farmers who engage in agricultural contract farming. Among those who reported practising contract farming, nearly half (47.37%) indicated that they have verbal contracts, which are informal or oral agreements, while only a small proportion (8.83%) reported having written contracts, which are formal in nature.

Figure 3

Type of contracts




The logistic regression analysis demonstrated a statistically significant finding of $\chi 2(12) = 59.282$, $p < 0.001$, indicating that the model was able to explain between

21.0% and 28% of the variability in contract farming. Moreover, the model exhibited a 70.7% overall classification accuracy. The goodness-of-fit test (Hosmer and Lemeshow) yielded statistically insignificant values, $\chi 2$ (8) = 4.864, $p > 0.772$, suggesting a good fit of the model to the data. Table 2 presents the logistic regression results of the parameters influencing contract farming among Kosovo farmers.

The result showed that the predicted logit of (CONTRACT FARMING) = –4.330+ (1.298) *LOCATION + (0.453) *GENDER + (0.172) *AGE + (0.096) *EDUCATION LEVEL + (0.007) *TRUST(1) + (0.364) *TRUST(2) + (0.090) *TRUST(3) + (0.045) *TRUST(4) + (1.333) *COOP+ (1.299) *TYPE OF FARMING(1) + (–0.695) *TYPE OF FARMING(2)+ (0.020) *SIZE OF FARM.

Based on the findings of the binary logistic regression analysis presented in Table 2, it was revealed that location, cooperation, and type of farming were significant predictors of contract farming at a significance level of $p < 0.05$, while gender, age, education level, trust, and size were marginally non-significant ($p > 0.05$).

(I). Specifically, the results indicated a substantial positive association ($p < 0.05$) between the location of farmers and their engagement in contract farming. In particular, the odds ratio of contract farming was found to be 3.661 times higher in rural regions than in urban areas. Moreover, contract farming was found to be less widespread in urban farms than in rural farms, and urban farmers exhibited a higher tendency to participate in contract farming. This trend may be attributed to the fact that rural farmers are likely to have fewer resources and less access to markets than their urban counterparts. Contract farming may offer an opportunity for these farmers to access markets and earn higher incomes. On the other hand, the lower prevalence of contract farming in urban farms may be due to the relatively higher availability of alternative income sources in urban areas. Additionally, urban farmers may have better access to markets and greater bargaining power, reducing their need to engage in contract farming.

(II) The results of our analysis indicate that gender is not a significant predictor of engagement in contract farming, as demonstrated by a p value greater than 0.05. These findings differ from previous research by Bellemare (2012), Machio–Meemken (2023), and Nugussie (2009), who posited a higher likelihood of males engaging in contract farming compared to females, underscoring the unique dynamics of the agricultural landscape in Kosovo. Contract farming initiatives, particularly in medicinal aromatic plants, have shown promise in promoting women's inclusion (PPSE 2019). A gender profile by the FAO and Kosovo Women's Network (KWN) emphasizes the need for gender-responsive strategies and women's empowerment in agriculture (KWN, 2022). Despite no statistically significant gender disparity in contract farming participation, our findings align with the broader recommendations in the FAO–KWN report, highlighting the ongoing importance of gender-related considerations in Kosovo's agricultural sector.

(III) The statistical analysis revealed that the age of farmers did not show a significant effect ($p>0.05$) on their participation in contract farming. This result differs from the findings of Muroiwa (2019) and Simmons et al. (2005), which suggested that younger farmers are more likely to engage in contract farming than their older counterparts.

(IV) The statistical analysis revealed that the level of education of farmers did not have a significant effect ($p>0.05$) on their engagement in contract farming. These results contradict the findings of several previous studies (Kanana 2019, Loquias et al. 2021, Muroiwa 2019, Rondhi et al. 2020, Simmons et al. 2005, Swain 2012), which reported that higher levels of education were positively associated with participation in contract farming.

(V) Based on our analysis, the trust of farmers was found to be non-significant ($p>0.05$) in relation to their engagement in contract farming. This is in contrast to the findings of (Aazami et al. 2011), who found that trust was a significant predictor of contract farming participation among farmers.

(VI) The study revealed a statistically significant positive association ($p < 0.01$) between the level of cooperation among farmers and their involvement in contract farming. The odds ratio of contract farming was found to be 3755 times higher for farmers who engaged in cooperative activities than for those who did not. These findings are consistent with those of a previous study by (Simmons et al. 2005). Thus, the results suggest that increasing cooperation among farmers may lead to greater participation in contract farming, which can potentially lead to improved outcomes for farmers and the agricultural sector.

(VII) The next variable was the type of farming, which has positive significance ($p< 0.01$) in contract farming. Vegetable producers are 3.664 times more likely to cooperate than cereal producers. The results also showed that mixed farms have a significant negative relationship ($p < 0.05$) in contract farming. A higher number of farmers engaged with mixed farms would correspond with lower odds of contract farming, whereas farmers who are engaged with cereals are 2.00 (1/0.499) times more likely to enter into contract farming. Moreover, it can be seen in the difference in mean among groups; 2 (vegetable) which have contract farming is greater ($0.19 \pm 0.397$), compared to group 1 (cereals) ($0.11 \pm 0.319$) and group 3 (mixed farms) ($0.19 \pm 0.395$).

(VIII) The last element was the size of farms that did not have significance ($p>0.05$) entering into contract farming. These results are confirmed by (Kanana 2019). Some of the authors, such as (Fafchamps–Lund 2003, Mensah 2012, Rondhi et al. 2020, Simmons et al. 2005), stated a negative influence of farm size on participation in contract farming.

Contract farming is largely formed by the farm`s location (LOC; 0.17), followed by the type of farming (TYPE; 0.15) and cooperation activity (COOP; 0.13), according to the value of R.

Table 2

Factors affecting contract farming

| FACTORS | B | S.E | Wald | Df | p value | Exp(B) | R |
|---|---|---|---|---|---|---|---|
| I. LOC (urban)<br>rural | 1.298 | 0.363 | 12.810 | 1 | 0.000 | 3.661 | 0.17 |
| II. GEN (female)<br>male | 0.453 | 0.648 | 0.488 | 1 | 0.485 | 1.573 | – |
| III. AGE (50–80)<br>14–49 | 0.172 | 0.324 | 0.281 | 1 | 0.596 | 1.187 | – |
| IV.EDU (university)<br>primary/higher school | 0.096 | 0.370 | 0.068 | 1 | 0.794 | 1.101 | – |
| V. TR | | | 0.451 | 4 | 0.978 | | – |
| VI. COOP (no)<br>yes | 1.323 | 0.465 | 8.099 | 1 | 0.004 | 3.755 | 0.13 |
| VII. TYPE (cereals) | | | 13.220 | 2 | 0.001 | | 0.15 |
| Vegetable | 1.299 | 0.517 | 6.312 | 1 | 0.012 | 3.664 | 0.10 |
| Mix farms | –0.695 | 0.335 | 4.303 | 1 | 0.038 | 0.499 | 0.07 |
| VIII. SIZE | 0.020 | 0.183 | 0.012 | 1 | 0.912 | 1.020 | – |
| Constant | –4.330 | 1.422 | 9.270 | 1 | 0.002 | 0.013 | 0.08 |

*Notes:* –2 Log likelihood = 285.580; Hosmer and Lemeshow test (X2 = 4.864, df = 8, p = 0.772); Pseudo R–squares (Cox and Snell R2 = 21%; Nagelkerke R2 = 28%); Overall percentage of correctly predicted = 70.7%; B: unstandardized regression weight; S.E.: standard error; Sig.: significance; Exp(B): exponentiation of the B coefficient; Wald.: Wald chi-square value; Df.: the degrees of freedom. ("–" Factors that were not shaped in contract farming).

Based on the results of an independent sample t test (Table 3), it was found that there is a significant difference in income between contract and non-contract farmers in Kosovo. Specifically, contract farmers generated higher income than non-contract farmers ($M_{cont}$=15,418.39, $M_{non\text{-}cont}$=10,607.02, $t$=2.135, $p$<0.035, $d$=0.352). These findings are consistent with previous studies by (Hoang–Nguyen 2023, Little–Watts 1994, Loquias et al. 2021, Marwa–Manda 2022, Wang et al. 2014), which also found a positive association between contract farming and increased income for farmers. Moreover, Prasada et al. (2022) established a correlation between the availability of agricultural land and farmers' income. Similarly, findings from Apulia farms indicate that higher private capital increases the probability of firms securing public aid, emphasizing the substantial role of private investment in supporting agriculture (Caruso–Conto 2019). This interconnected web of research underscores the multifaceted factors influencing farmers' income and elucidates the nuanced dynamics within the agricultural sector.

Table 3

**Comparison of income between contract farmers and non-contract farmers**

| Variables | Contract farmers | Non-contract farmers | | | | |
|---|---|---|---|---|---|---|
| | mean | mean | mean difference | t-value | p-value | d-value |
| Income, euro | 15,418.39 | 10,607.02 | 2,670.135 | 2.135 | 0.035 | 0.352 |

This result suggests that contract farming may be a useful mechanism for enhancing the economic well-being of farmers in Kosovo. By engaging in contract farming, farmers may have access to better markets, technical assistance, and financial support, which can ultimately lead to increased profitability. Therefore, policymakers and agricultural stakeholders should consider promoting and supporting contract farming to improve the livelihoods of farmers and promote sustainable agricultural development in Kosovo.

## Conclusion

In conclusion, this study provides insights into the determinants of smallholder farmers' participation in contract farming and the potential benefits that may result. These findings indicate that location, farm type, and cooperative membership significantly influence participation in contract farming in Kosovo. Furthermore, the results demonstrate that contract farming can lead to increased farm income for participating farmers. These findings suggest that contract farming may serve as a viable rural development strategy for smallholder farmers facing market access challenges. As such, policymakers may consider promoting and supporting contract farming initiatives tailored to the specific contexts of smallholder farmers in Kosovo and other similar settings. Further research is warranted to investigate the broader social and economic impacts of contract farming on smallholder farmers and rural communities.

## REFERENCES

AAZAMI, M.–SORUSHMEHR, H.–MAHDEI, K. N. (2011): Socio-economic factors affecting rural WP in productive co operations: Case study of Paveh ball-making cooperative *African Journal of Agricultural Research* 6 (14): 3369–3381. https://doi.org/10.5897/AJAR11.188

BARANYAI, Z.–KIRÁLY, Z.–ELAM, Á.–MURIQI, S.–PAPP-VÁRY, Á. (2018): Drivers of cooperation activity in Hungarian agriculture *Annals of The Polish Association of Agricultural and Agribusiness Economists* 20 (3): 9–15. https://doi.org/10.5604/01.3001.0012.1476

BARNA, I.–SZÉKELYI, M. (2004): *Túlélőkészlet az SPSS-hez* Typotex, Budapest.

BELLEMARE, M. F. (2012): As you sow, so shall you reap: The welfare impacts of contract farming *World Development* 40 (7): 1418–1434. https://doi.org/10.1016/j.worlddev.2011.12.008

BELLEMARE, M. F.–BLOEM, J. R. (2018): Does contract farming improve welfare? A review. *World Development* 112: 259–271. https://doi.org/10.1016/j.worlddev.2018.08.018

BEZABEH, A.–BEYENE, F.–HAJI, J.–LEMMA, T. (2020): Impact of contract farming on income of smallholder malt barley farmers in Arsi and West Arsi zones of Oromia region, Ethiopia *Cogent Food & Agriculture* 6 (1): 1834662. https://doi.org/10.1080/23311932.2020.1834662

CARUSO, D.–CONTO, F. (2019): Private capital in the rural development programme: The case of the Apulia Region, Southern Italy *Regional Statistics* 8 (2): 3–18. https://doi.org/10.15196/RS080209

FAFCHAMPS, M.–LUND, S. (2003): Risk-sharing networks in rural Philippines *Journal of Development Economics* 71 (2): 261–287.

GJOKAJ, E.–HALIMI, K.–XHABALI, V.–IMAMI, D.–GJONBALAJ, M. (2017): Fruits value chain and distribution channels in Kosovo *Bulgarian Journal of Agricultural Science* 23 (1): 22–30.

HERZFELD, T. (2021): *Commercialization of smallholder farms in Kosovo* FAO. https://doi.org/10.4060/cb7828en

HOANG, V. (2021): Impact of contract farming on farmers' income in the food value chain: A theoretical analysis and empirical study in Vietnam. *Agriculture* 11 (8): 797. https://doi.org/10.3390/agriculture11080797

HOANG, V.–NGUYEN, V. (2023): Determinants of small farmers' participation in contract farming in developing countries: A study in Vietnam. *Agribusiness* 39 (3): 836–853. https://doi.org/10.1002/agr.21795

KHAN, M. F.–NAKANO, Y.–KUROSAKI, T. (2019): Impact of contract farming on land productivity and income of maize and potato growers in Pakistan *Food Policy* 85: 28–39. https://doi.org/10.1016/j.foodpol.2019.04.004

KULKARNI, M. (2016): *Benefits of ICT-based learning strategies for students* Lulu.com.

LITTLE, P. D–WATTS, M. (1994): Living under contract: Contract farming and agrarian transformation in Sub-Saharan Africa *The Journal of Interdisciplinary History* 27 (2): 368.

LOQUIAS, M. P.–DIGAL, L. N.–PLACENCIA, S. G.–ASTRONOMO, I. J. T.–ORBETA, M. L. G.–BALGOS, C. Q. (2021): Factors affecting participation in contract farming of smallholder Cavendish banana farmers in the Philippines *Agricultural Research* 11: 146–154. https://doi.org/10.1007/s40003-021-00544-0

MACHIO, P. M.–MEEMKEN, E.-M. (2023): Women's participation in contract farming. *The Journal of Development Studies*, 59 (6): 894–910. https://doi.org/10.1080/00220388.2023.2188109

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

MARWA, M. E.–MANDA, J. (2022): Do youth farmers benefit from participating in contract farming? Evidence from French beans youth farmers in Arusha, Tanzania *Agrekon* 61 (4): 379–398. https://doi.org/10.1080/03031853.2022.2099917

MEEMKEN, E.-M.–BELLEMARE, M. F. (2020): Smallholder farmers and contract farming in developing countries *Proceedings of the National Academy of Sciences* 117 (1): 259–264. https://doi.org/10.1073/pnas.1909501116

MENSAH, S. O. (2012): Logistic analysis of factors motivating smallholder farmers to engage in contract farming arrangements with processing firms in Ghana *Journal of Biology Agriculture and Healthcare* 2 (11): 58–73.

MIYATA, S.–MINOT, N.–HU, D. (2009): Impact of contract farming on income: Linking small farmers, packers, and supermarkets in China *World Development* 37 (11): 1781–1790. https://doi.org/10.1016/j.worlddev.2008.08.025

MORRISSY, J. D. (1974): *Agricultural modernization through production contracting; the role of the fruit and vegetable processor in Mexico and Central* America Praeger, New York.

MURIQI, S.–BARANYAI, Z.–FEKETE-FARKAS, M. (2021): Comparative analysis of cooperative & non-cooperative farmers in Kosovo *Economics & Sociology* 14 (3): 242–263. https://doi.org/10.14254/2071-789X.2021/14-3/13

MURIQI, S.–FEKETE-FARKAS, M.–BARANYAI, Z. (2019): Drivers of cooperation activity in Kosovo's agriculture *Agriculture* 9 (5): 96. https://doi.org/10.3390/agriculture9050096

MUROIWA, J.–MUSHUNJE, A.–MUSITINI, T. (2019): Factors influencing smallholder farmer participation in tobacco contract farming arrangements in mount Darwin district of Zimbabwe *International Journal of Development and Sustainability* 7 (12): 2986–3001.

NI'MAH, N.–IRHAM (2023): Chili farmers' willingness to continue keeping contract farming with agro-industry in Jember Regency *AIP Conference Proceedings* 2583 (1): 110014. https://doi.org/10.1063/5.0116137

NUGUSSIE, W. Z. (2009): Why some rural people become members of agricultural cooperatives while others do not *Journal of Development and Agricultural Economics* 2: 138–144.

OTSUKA, K.–NAKANO, Y.–TAKAHASHI, K. (2016): Contract farming in developed and developing countries *Annual Review of Resource Economics* 8 (1): 353–376. https://doi.org/10.1146/annurev-resource-100815-095459

PAPP-VARY, A.–GROTTE, J.–MURIQI, S.–BARANYAI, Z. (2019): Drivers of machinery sharing arrangements – experiences of empirical survey in Hungarian agriculture *18th International Scientific Conference Engineering for Rural Development* Jelgava, 22–24. 05. 2019. https://doi.org/10.22616/ERDev2019.18.N184

PRASADA, I. Y.–DHAMIRA, A.–NUGROHO, A. D. (2022): Agricultural land availability and farmer's income in Java Island, Indonesia, 1990–2018 *Regional Statistics* 12 (3): 85–103. https://doi.org/10.15196/RS120304

RONDHI, M.–AJI, J. M. M.–HASAN, A. F.–YANUARTI, R. (2020): Factors affecting farmers' participation in contract farming: The case of broiler sector in Indonesia *Tropical Animal Science Journal* 43 (2): 183–190. https://doi.org/10.5398/tasj.2020.43.2.183

RUML, A.–RAGASA, C.–QAIM, M. (2022): Contract farming, contract design and smallholder livelihoods *Australian Journal of Agricultural and Resource Economics* 66 (1): 24–43. https://doi.org/10.1111/1467-8489.12462

SIMMONS, P.–WINTERS, P.–PATRICK, I. (2005): An analysis of contract farming in East Java, Bali, and Lombok, Indonesia *Agricultural Economics* 33 (s3): 513–525. https://doi.org/10.1111/j.1574-0864.2005.00096.x

SWAIN, B. B. (2012): Determinants of farmers' participation in contract farming: The cases of Gherkin and Paddy seed in Andhra Pradesh, India *Millennial Asia* 3 (2): 169–185. http://dx.doi.org/10.1177/097639961200300203

TASLIM, A.–KARIM, M. R.–RAHMAN, M. S. (2021): Factors influencing participation of farmer in contract farming in Narsingdi district of Bangladesh *Asian Journal of Agricultural Extension, Economics & Sociology* 39 (11): 569–576. https://doi.org/10.9734/ajaees/2021/v39i1130785

TON, G.–VELLEMA, W.–DESIERE, S.–WEITUSCHAT, S.–D'HAESE, M. (2018): Contract farming for improving smallholder incomes: What can we learn from effectiveness studies? *World Development* 104: 46–64. https://doi.org/10.1016/j.worlddev.2017.11.015

WANG, WANG, Y.–DELGADO, M. S. (2014): The transition to modern agriculture: Contract farming in developing economies *American Journal of Agricultural Economics* 96 (5): 1257–1271. https://doi.org/10.1093/ajae/aau036

YMERI, P.–GYURICZA, C.–FOGARASSY, C. (2020): Farmers' attitudes towards the use of biomass as renewable energy – A case study from Southeastern Europe *Sustainability* 12 (10): 4009. https://doi.org/10.3390/su12104009

## INTERNET SOURCES

AROUNA, A.–MICHLER, J. D.–LOKOSSOU, J. C. (2019): Contract farming and rural transformation: Evidence from a field experiment in Benin *NBER Working Papers* No. 25665. National Bureau of Economic Research, Inc., Cambridge, MA. https://ideas.repec.org/p/nbr/nberwo/25665.html (downloaded: June 2023)

EUROPEAN FUND FOR SOUTHEAST EUROPE [EFSE] (2013): *Agricultural finance in Kosovo.* https://www.efse.lu/fileadmin/user_upload/efse/news_migration/AF_Workshop_Presentation_in_English.pdf (downloaded: June 2023)

KANANA, M. C. (2019): *Factors influencing performance of contract farming in Kenya: A case of sorghum smallholder farmers in Imenti North, Meru County, Kenya* Thesis, UoN, Nairobi. http://erepository.uonbi.ac.ke/handle/11295/107357 (downloaded: June 2023)

KOSOVO WOMEN'S NETWORK (2022): *Kosovo gender profile: Agriculture and rural livelihoods.* https://womensnetwork.org/wp-content/uploads/2022/03/KWN_Gender-Profile-Agriculture-Rural-Livelihoods.pdf (downloaded: June 2023)

MINISTRY OF AGRICULTURE, FORESTRY AND RURAL DEVELOPMENT (2021): *Strategy for agriculture and rural development 2022–2028.* https://www.mbpzhr-ks.net/repository/docs/Green_Report_2021.pdf (downloaded: June 2023)

MINISTRY OF AGRICULTURE, FORESTRY AND RURAL DEVELOPMENT (2022): *Green report.* https://www.mbpzhr-ks.net/repository/docs/Kosovo__Green_Report_2022.pdf (downloaded: June 2023)

PROMOTING PRIVATE SECTOR EMPLOYMENT [PPSE] (2019): *Supporting contract farming in Kosovo.* https://www.shareweb.ch/site/Agriculture-and-Food-Security/focusareas/Documents/ras_sfras_meeting_2020_02_26_swisscontact.pdf (downloaded: June 2023)