



*Araştırma Makalesi / Research Article*

## The Impact of Unionization in the Agricultural Sector: Farmer Perceptions and Behavior

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### Abstract

For centuries, agriculture has been one of the vital sectors in economic development; its role in developing economies and rural development is still inevitable. Rising food and energy prices and the negative effects of climate change can be more problematic for middle-smallholder farmers or family enterprises and low-qualified farmworkers. To overcome them, unionization and cooperatives in agriculture may present a viable option. Unionization in agriculture can be a solution for vulnerable parts of agriculture, such as workers who are exploited by working cheap and long hours and small and family businesses in a market where cooperatives are disrupted. This study focuses on the impact of unionization in the agricultural market by exploring farmer behavior. World Values Survey Data (Wave 7) was applied to reveal the factors affecting farmers' perception of the economic and social factors from different countries by segmenting union members and non-members using binomial logistic regression models. The findings show that unionized farmers have different motivations than non-members. Income targeting policies are essential to support agri-business owners.

**Keywords:** Unionization, Farmer Behavior, Agriculture, Perceptions.

## Tarım Sektöründe Sendikalaşmanın Etkisi: Çiftçi Algıları ve Davranışı

### Öz

Yüzyıllar boyunca tarım, ekonomik kalkınmada hayati sektörlerden biri olmuştur; gelişmekte olan ekonomiler ve kırsal kalkınmadaki rolü hala kaçınılmazdır. Artan gıda ve enerji fiyatları ve iklim değişikliğinin olumsuz etkileri, orta-küçük ölçekli çiftçiler veya aile tarım işletmeleri, düşük vasıflı tarım işçileri için daha sorunlu olabilir. Bu sebeple, tarımda sendikalaşma ve kooperatifler önemli seçenekler sunmaktadır. Tarımda sendikalaşma, ucuz ve uzun saatler çalışarak sömürülen işçiler, kooperatifçiliğin sektöre uğradığı bir pazardaki küçük ve aile işletmeleri gibi tarımın hassas kesimleri için bir çözüm olabilir. Bu çalışma, çiftçi davranışını inceleyerek tarım piyasasında sendikalaşmanın etkisine odaklanmaktadır. İkili lojistik regresyon modeli kullanılıp, sendika üyelerini ve üye olmayan farklı ülkelerden çiftçilerin ekonomik ve sosyal faktörlere ilişkin algılarını etkileyen faktörler Dünya Değerler Anketi Verileri (7. Dalga) kullanılarak incelenmiştir. Bulgular, sendikalı çiftçilerin üye olmayanlardan farklı motivasyonlara sahip olduğunu göstermektedir. Gelir artırıcı politikalar, tarımsal işletme sahiplerini desteklemek için gereklidir.

**Anahtar Kelimeler:** Sendikalaşma, Çiftçi Davranışı, Tarım, Algılar.

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## INTRODUCTION

Agriculture has been a vital sector in economic development for centuries; its role in developing economies and rural development is still inevitable. From the 20<sup>th</sup> Century, conventional agriculture imposed mechanization in agricultural systems, forcing mid and small farmers to adopt it. Within the implication of "*The Green Revolution*," the increase in yields has been the target to sustain growth and development in developing countries like Mexico and India. As the success of *the Green Revolution* has been under discussion, there is no doubt that it promoted the adoption of technologies like mechanization, the use of substances, and artificial fertilizers and shaped conventional agricultural production.

In the era of Climate Crisis, the world has been facing the threat of an upcoming food shortage. The lack of supply in agriculture has had devastating effects throughout history as it could generate a similar catastrophe to the one that Thomas Malthus postulated in the 19<sup>th</sup> Century. Rising food and energy prices and the negative effects of climate change on agriculture and the environment might cause inefficiency in agricultural markets. These issues can be more problematic for middle-smallholder farmers, family agri-businesses, and low-qualified farmworkers, which may worsen in the future. To overcome them, unionization and cooperatives in agriculture may present a viable option to adopt small-middle and family enterprises and low-qualified farm workers in the economy.

Cooperatives in agriculture provide several advantages, such as optimal use of factors of production, efficient production scales, lower production, transportation, and marketing costs, and lower interest rates in credit loans. Due to the legal barriers to establishing and operating processes, it is difficult to establish cooperatives in some developing countries, and the functions of existing cooperatives are limited. Therefore, unionization in agriculture can solve vulnerable parts of agriculture, such as workers who are exploited by working cheap and long hours and small and family enterprises in a market where cooperatives are disrupted. Besides, social interactions, family ties, and succession may play an important role in designing agricultural enterprises in agriculture. Perceptions and attitudes provide crucial information on the behavior of farmers. Thus, farmers' perceptions and attitudes are crucial to explore to implement desirable policies to hasten cooperation and unionization in agriculture.

This study examines the impact of unionization in the agricultural market by investigating farmer behavior. I conduct a socio-economic analysis of unionized workers and agribusiness owners, examining their perceptions regarding equality, well-being, and financial behavior on a global scale. The study's primary objective is to identify and compare differences in the agricultural sector based on union membership. It is worth noting that the availability of micro datasets on the impact of cooperatives and unions in agriculture is limited or inaccessible due to inadequate public release. This research utilizes the World Values Survey Data (Wave 7) to analyze farmers' perceptions of economic and social factors in various countries, differentiating between union members and non-members through binary logistic regression models. The results indicate that unionized farmers exhibit distinct motivations compared to non-members. The findings emphasize the importance of implementing income-targeting policies to support agri-business owners.

As far as it is known, the literature on unionization in agriculture does not include a worldwide socio-economic analysis, so that the study can be pioneering in this context. The structure of the study is as follows: First, the study presents a summary of the limited literature

on unionization in agriculture. In the second section, the methodology and econometric models will be presented. Thirdly, results and discussion will be provided. Lastly, the concluding remarks will be given.

## **1. LITERATURE REVIEW**

Despite the fact that labor union initiatives and practices are quite popular topics in social sciences, the literature on labor unions in agriculture is limited. Based on existing literature, regional or/and country-specific analyses contribute to the research on agricultural labor unions. This can be seen as surprising, as FAO has had a long history of cooperating with civil society organizations, including rural workers' organizations and international agricultural trade unions.

As ILO (2007) denotes, "Since waged agricultural workers make up such a significant segment of the rural workforce, workers and their trade unions need to be recognized as playing a vital role in sustainable agriculture and rural development as well as in industrial change and in protecting the environment." Moreover, farms and plantations can only become sustainable workplaces if waged workers achieve decent employment and living conditions (ILO, 2007). As Czarzasty (2004) denotes, farmers are a social class and can act together and provide for higher output. As Khitakhunov denotes, cooperation can be an effective solution to overcome the negative impacts of the Pandemic on agriculture (Khitakhunov, 2020).

In the historical context, Wellman (1997) explores the union's struggles, victories, and significance in the context of the San Francisco waterfront. He states that the presence of labor unions in agriculture is necessary, and organized labor in the agricultural industry might strengthen the sector's resilience and improve the working conditions of farmers (Wellman, 1997). Additionally, labor unions in agriculture act as a labor movement and organizations for insurgent poor people, as Majka and Majka (1982) state.

From the social context, Córdoba et al. (2018) indicate that the labor union in agriculture advocates defend social change in the agricultural sector. From the equity perspective, grassroots movements and alliances between labor unions and environmental activists can solve the problems of injustices in agricultural communities (Cole & Foster, 2001). Migrant farmworkers might also have specific and terrifying problems in terms of health and social equity. Holmes (2013) addresses the migrant farmworkers' problem in the US and expresses the unions' potential to advocate these farm workers' rights.

Unionization in the agricultural sector has some struggles and barriers. Jamieson (1946) highlights the small impact of the unionized farm movement. Moreover, unionization in agriculture is still at an embryonic stage and is one of the least unionized sectors, while in food manufacturing, it is well established (Hurd, 1973; Uppal, 2011). Martin (2015) denotes that hired and seasonal farmworkers have been hard to be organized into unions due to exits, contractors, and dispersion. Regarding exits, farmworkers that are union leaders tend to leave the unions for better nonfarm jobs. Therefore, newcomers must be trained to maintain the ranks of incumbents. Second, it is unlikely to raise farmworkers' wages due to the presence of contractors who recruit workers and bring them to farms, making it challenging to pinpoint the responsible party. Language barriers compound the issue, as most workers cannot communicate effectively with predominantly white employers. Third, it is hard to organize many farm workers dispersed on different farms (Martin, 2015).

The unionization can differ across countries: Schwartz (1941) denotes that it is unknown in the US, whereas it has been apparent in Europe since the 1880s. From another point of view, Gallin (2001) expresses that the difficulty of the presence of informal workers in agriculture is apparent in unionization.

## 2. METHODOLOGY AND ECONOMETRIC ANALYSIS

### 2.1. Methodology

This study focuses on the impact of unionization in the agricultural market by exploring farmer behavior. World Values Survey Data (WVS) (Wave 7) (Haerpfer et al., 2020) was applied to reveal the factors affecting farmers' perception of the economic and social factors from different countries by segmenting union members and non-members by conducting binomial logistic regression models. WVS provides a rich data set in which different questions from various aspects can be raised. Moreover, randomly selected samples from more than 100 countries are available.

The study adopts a binomial regression model, which can predict the probability of the observation is binary or dichotomous as it can take one of 2 different categories (Fritz & Berger, 2015). To reveal the behavior in various aspects, the application of binary logistic regression models is widespread: consumer behavior, voting behavior, employee turnover, and health behavior. In the analyses of union membership, Otieno et al. (2021) used binary logistic regression to reveal the dynamics of trade union membership. As far as it is known, there is no such study applying a micro dataset to reveal the behavior among members and non-members of labor unions in agriculture. The logistic regression model can be shown as:

$$\text{logit}(p) = \beta_0 + \beta_1x_1 + \beta_2x_2 + \dots + \beta_nx_n \quad (1)$$

where  $\text{logit}(p)$  represents the natural logarithm of the odds of the binary outcome  $p$  represents the probability of the union membership.  $\beta_0, \beta_1, \beta_2, \dots, \beta_n$  are the coefficients associated with the independent variables  $x_1, x_2, \dots, x_n$ , respectively. To obtain the predicted probability of success ( $p$ ), the equation can be inverted using the logistic function, also known as the sigmoid function:

$$p = 1 / (1 + e^{(-\text{logit}(p))}) \quad (2)$$

This allows for estimating the probability of union membership based on the values of the independent variables and the estimated coefficients from the logistic regression model.

As noted above, the binary dependent variable has two categories: 0: Not being a member of a labor union; 1: Being a member of a labor union. Therefore, the econometric analyses would be constructed based on the likelihood (probability) of an individual being a member of a labor union. A sub-data set is derived from WVS containing all participants that are either employed or employers in the agricultural sector. The dataset contains independent variables from various fields: first, socio-demographical characteristics –like gender, age, education level, marital status, and citizenship- are added. As socio-demographic characteristics can serve as control variables in behavioral analyses, they can be incorporated into econometric analyses to control and account for their potential effect on the dependent variable.

Moreover, the immigrants of the participant and the father's immigrancy status are added as control variables. The reason behind this addition is the fact that immigrant workers are more

common in agriculture.<sup>1</sup> (Martin, 2016; Sims, 2021). In addition, Martin (2016) suggests that immigrant workers might join laboring activities even if they do not have citizenship. Thus, the regional residence is another control variable to show the impact of regions on unionization since unionization can differ across regions and countries (Schwartz, 1941). Furthermore, variables measuring professional action measure the relationship between active and inactive memberships to other professional organizations, confidence in labor unions, and the likelihood of membership in labor unions. In the analyses of behavior, it is common to use confidence and action taken to measure the behavior (Ajzen, 1991). The variables on well-being like happiness, health, and financial satisfaction as indicators of well-being are typically included in the model as they are addressed in behavioral economics and reflect the level of welfare (Benjamin et al., 2020). Since labor unions defend the rights of its member (Córdoba et al., 2018)), The study also looks into any differing characteristics in the context of equity. Thus, variables regarding the perceptions of equality are added. To reveal the impact of unions on wage/income, the economic conditions through economic variables are measured: *i. being the chief wage earner in the family, ii. income level, iii. saving money in the last 12 months, iv. spent some savings in the last 12 months, v. borrowed money in the last 12 months, vi. gone without cash in the last 12 months.* Table 1 shows the results of the econometric models.

## 2.2. Econometric Analyses

Since the present study focuses on investigating the impact of unionization in the agricultural sector regarding the exploration of the farmer's behavior, it reveals the factors affecting the union members in a structured manner. Firstly, the analysis focuses on farmworkers, as labor unions primarily consist of this group. Therefore, the factors that affect the probability of being a union member among agricultural workers were examined in the first econometric model. Secondly, attention is given to farm owners, considering that small-sized family enterprises may employ contractual workers. In the second econometric model, the factors influencing the probability of being an employer in agriculture are analyzed. The objective is to uncover variations in socio-economic factors, well-being, and financial status between union members and non-members. Finally, in the third model, all participants employed in or acting as employers within the agricultural sector are considered.

**Table 1**  
*Econometric Models*

VARIABLES	Worker	Owner	ALL	VARIABLES	Worker	Owner	ALL
<b>Control Variables</b>				<b>Professional Action</b>			
<b>FEMALE</b>	-0.186 (0.142)	-0.0720 (0.173)	-0.0652 (0.107)				
<b>AGE</b>	-0.00472 (0.00498)	0.00430 (0.00571)	-0.00142 (0.00364)	<b>ACTIVE MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS</b>	3.257*** (0.173)	2.319*** (0.177)	2.819*** (0.119)
<b>EDUCATION</b>	0.0389 (0.0434)	-0.00917 (0.0483)	0.00345 (0.0312)	<b>INACTIVE MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS</b>	2.819*** (0.172)	2.117*** (0.174)	2.471*** (0.117)
<b>CITIZENSHIP</b>	0.815 (1.199)	-1.710 (1.040)	-0.379 (0.892)	<b>CONFIDENCE IN LABOR UNION</b>	0.476*** (0.0647)	0.259*** (0.0778)	0.387*** (0.0486)
<b>MARRIAGE</b>	0.0815 (0.143)	0.000502 (0.172)	0.0390 (0.107)	<b>Well being indicators</b>			
<b>HOUSEHOLD NUMBER</b>	0.0466 (0.0286)	0.115*** (0.0323)	0.0734*** (0.0208)	<b>HAPPINESS</b>	0.0144 (0.0855)	-0.215** (0.101)	-0.103 (0.0637)
<b>CHILD NUMBER</b>	0.0553 (0.0368)	-0.0116 (0.0388)	0.0168 (0.0262)	<b>HEALTH</b>	-0.117 (0.0724)	0.164** (0.0823)	0.00199 (0.0530)
<b>IMMIGRANTS</b>	0.288 (0.736)	-0.568 (0.941)	0.000437 (0.555)	<b>FINANCIAL SATISFACTION</b>	-0.0312 (0.0239)	0.0454* (0.0276)	0.00108 (0.0177)
<b>FATHER'S IMMIGRANTS</b>	-0.508 (0.687)	1.375** (0.538)	0.306 (0.414)	<b>Attitudes towards equality</b>			
<b>SOUTH ASIA</b>	-0.0565 (0.310)	0.232 (0.332)	0.0693 (0.220)	<b>ATTITUDE TOWARD INCOME EQUALITY</b>	0.0155 (0.0185)	-0.00514 (0.0221)	0.00803 (0.0139)

<b>NORTH AMERICA</b>	-0.356 (0.689)		-0.675 (0.569)	<b>ATTITUDE TOWARDS IMMIGRANTS</b>	0.0759 (0.0531)	0.0598 (0.0616)	0.0589 (0.0392)
<b>MENA</b>	0.538* (0.282)	-0.473 (0.517)	0.497** (0.212)	<b>ATTITUDES TOWARD EQUAL TAXES</b>	-0.0297 (0.0189)	-0.0958*** (0.0212)	-0.0618*** (0.0137)
<b>LATIN AMERICA AND THE CARIBBEAN</b>	0.889*** (0.252)	1.300*** (0.335)	0.966*** (0.184)	<b>Economic Variables</b>			
<b>EUROPE AND CENTRAL ASIA</b>	-0.248 (0.303)	-0.222 (0.353)	-0.183 (0.222)	<b>BEING THE CHIEF WAGE EARNER</b>	-0.0624 (0.135)	0.166 (0.170)	0.0132 (0.104)
<b>EAST ASIA AND THE PACIFIC</b>	0.148 (0.246)	0.500** (0.240)	0.275* (0.166)	<b>INCOME</b>	0.0234 (0.0285)	0.0743** (0.0328)	0.0480** (0.0210)
				<b>SAVING MONEY</b>	0.337** (0.160)	-0.226 (0.205)	0.108 (0.124)
<b>Constant</b>	-4.080*** (1.309)	-2.457** (1.176)	-3.082*** (0.960)	<b>SPENT SOME SAVINGS</b>	0.0857 (0.184)	0.875*** (0.176)	0.474*** (0.122)
<b>Observations</b>	2,884	1,816	4,712	<b>BORROWED CASH</b>	-0.147 (0.178)	0.170 (0.221)	-0.0319 (0.136)
<b>Standard errors in parentheses</b>		***p<0.01, ** p<0.05, * p<0.1		<b>GONE W/O CASH</b>	0.0617 (0.0599)	0.183*** (0.0682)	0.114*** (0.0440)

### 2.3. Results

The findings show different prototypes of farmers across regions, and unionized farmers have different motivations than non-members. Results show that socio-demographic variables partially impact the likelihood of membership in labor unions in agriculture. We do not see any impact on gender, age, education, or citizenship. However, we see farm owners living in large families have a high tendency to be union members. The reason behind that could be a large number of family members might cause the employment of subsistence workers, which causes product maximization rather than profit maximization. Facing low income might have pushed them to become union members. We see farm owners whose fathers are immigrants tend to become union members. From a regional context, agricultural employment tends to become unionized in Latin America and the Caribbean, MENA, East Asia, and the Pacific, with relatively low-income levels than others.

Membership in professional organizations significantly and positively impacts unionization in agriculture. Union members have strong confidence in labor unions. We do not see a strong impact of well-being on unionization: unhappy farm owners are likelier to become union members. However, farm owners with good health status and who are financially satisfied tend to become union members. From the view of equity and economic values, we do not see a strong differentiation of union members: those who support fair taxing are less likely to become union members.

Income has a significant and positive impact on unionization in agriculture. Moreover, farm workers who saved money in the last 12 months are union members. Whereas we see farm owners with financial problems (like going without cash in the last 12 months) are most likely union members. Family farm owners have a high tendency to be unionized.

### 3. CONCLUDING REMARKS

Unionization can be an important instrument to empower vulnerable stakeholders in agriculture: small and family businesses and low-qualified workers to protect the rights of farmers and agricultural workers. Since the rising food prices cause high volatility in both the demand and supply side of the market and the Climate Crisis might affect the volume of arable lands in the near future, agriculture might cause the price instability problem more severely, which can generate a loss of farm income. This paper investigates farmers' perceptions and behavior by segmenting them following their union membership. We see there are differences across farmers regarding their memberships. We see workers' memberships in unions ameliorate their living standards.

Policies targeting family farms can be important to increase unionization. Thus, regional-based policies must be implemented to raise unionization. The study found no correlation between well-being and union membership. However, income is highly correlated with union membership: policies to target members' well-being can be an optional target for the unions. Lastly, we see a differentiation between owners and workers: farm workers who are union members are financially better off, but owners suffer. So that income-targeting policies for farm owners can be implemented.

This study is informative and preliminary research. Due to the lack of data on union membership, the study generates a data set from well-known data. It looks into the segmentation of members and non-members in the agricultural sector. For further research,



well-designed surveys can be applied to members and non-members, and explorative studies might focus on more detailed aspects of behavioral and financial differences.

#### NOTES:

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<sup>1</sup> In addition, Martin (2016) suggests that immigrant workers might join labor unions even if they do not have citizenship.

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#### AUTHOR STATEMENT

##### Statement of Research and Publication Ethics

This study has been prepared in accordance with scientific research and publication ethics.

##### Ethics Committee Approval

*For this research, Ethics committee approval was not required. The permission to apply the data from World Values Survey was taken.*

##### Author Contributions

Nazife Merve, Hamzaoğlu: Contribution rate (100%)

##### Conflict of Interest

There is no conflict of interest for the authors or third parties arising from the study.

##### Statement of Support

This study was not supported by any project.

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