




Article

Factors Affecting Landowners' Willingness to Sustain Hiring Foreign Farmworkers: The Case of Banana Producers in Mersin Province, Turkey

Osman Doğan Bulut ^{1,*} , Süleyman Karaman ² , Zeynep Çelik Kaysim ¹  and Ayşe Karadağ Gürsoy ¹

¹ Department of Agricultural Economics, Faculty of Agriculture, Iğdır University, Iğdır 76000, Turkey; zeynep.celik@igdir.edu.tr (Z.Ç.K.); ayse.karadag.gursoy@igdir.edu.tr (A.K.G.)

² Department of Agricultural Economics, Faculty of Agriculture, Akdeniz University, Antalya 07050, Turkey; skaraman@akdeniz.edu.tr

* Correspondence: osman.dogan.bulut@igdir.edu.tr

Abstract: Turkey is a country with a migration route throughout history and has provided protection to more refugees than any other country. But, the secure deportation of refugees is stated by government officials. This research aims to determine the socio-economic characteristics of landowners who hire foreign farmworkers and the factors affecting their willingness to employ foreign farmworkers. In order to meet the objective, a survey study based on face-to-face interviews was conducted with 200 landowners producing bananas and employing foreign farmworkers in Mersin. The level of willingness to hire foreign farmworkers was calculated, and the ordinal logistic regression (OLR) model was executed to determine affective factors. According to the results, the landowners' average age was 40.5 years, and their agricultural experience was 11.07 years, with 47% of them having a primary school degree. A total of 50% of the landowner farmers had a high willingness level, 29.5% had a medium willingness level, and 20.5% had a low willingness level. As for OLR, the factors of land size, continuity status of farmworkers, and the reasons to hire foreign farmworkers were significant ($p < 0.05$). Contrary to the general opinion, which is that the reason for the willingness to hire foreign farmworkers is to use them as a cheap labor force, this research found that the reason with the greatest impact is that landowner farmers have difficulty in finding local farmworkers. The shortage of agricultural labor has been filled with foreign farmworkers in Mersin province. Every foreign farmworker may be registered with one or more agricultural holdings so that the deportation of refugees does not cause a labor supply problem in agriculture; also, citizens seeking employment from other regions of Turkey may be supported to be farmworkers in regions with labor shortages. In order to avoid supply security problems in agricultural production, policymakers should urgently develop policies based on field data.



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1. Introduction

Turkey is among the important countries that are affected by migration movements from east to west due to its location. The concept of migration has a dynamic structure and is triggered by the economic and social problems experienced in the countries. Turkey is under the influence of migration flows as both a destination country and a transit country. It is observed that the foreign labor force (migrants–refugees) has increased in the last 10 years, especially in agricultural production regions where labor-intensive production is carried out. As a result of this situation, the local workforce participates in working life in other areas. In a report by Bahri Dagdas International Agricultural Research Institute [1], it was highlighted that the Afghan and Syrian labor force is especially employed in agricultural activities where the local labor force does not participate in employment. Agriculture is a business area that refugees can adapt to quickly. The Presidency of Migration Management [2]

announced that, while there were no Syrians under temporary protection in 2011, their population was 3,737,369 in 2021. Also, the number of irregular migrants is unknown, but 110,000 irregular migrants were deported in 2022.

Migration, particularly irregular migration, which can be defined in many different ways due to being a multi-disciplinary field, has gained more importance in Turkey's political agenda than ever before [3]. The United Nations High Commissioner for Refugees (UNHRC) announced that Turkey is the country hosting the most asylum seekers in the world. It is estimated that there are approximately 3.7 million Syrians and 300,000 Afghan refugees under temporary protection registered in Turkey [4]. Syrians under temporary protection have come to Turkey because of the war in their country, while Afghans have mostly come illegally because of internal turmoil and poverty. Syrians are the foreigners with the highest proportion (91%) among refugees in Turkey. Afghans, Iraqis, and Iranians are among other asylum seekers/refugees in Turkey [4,5].

Agriculture is the main working area of immigrants. As a sector that is more difficult to control and regulate, agriculture offers irregular migrants employment opportunities where they can more easily hide from legal authorities [6,7]. Since Syrians do not know what their stay duration/conditions will be in Turkey, they are afraid of being sent back to their countries. This situation causes Syrians to hesitate to register officially [8]. Therefore, informality has increased in the agricultural labor market [5,9]. Due to the unregistered foreign labor force, the increase in the foreign labor force cannot be calculated within the growth in the agricultural sector. When the average of the field studies conducted in different regions of Turkey is taken into account, it is predicted that there are approximately 450–600 thousand Syrians and at least 20–25 thousand Afghan shepherds working in the agricultural sector [10]. The Turkish Statistical Institute [11] reported that the rate of unregistered employment in agriculture was determined as 12.2%. It is estimated that the majority of this rate is composed of the foreign labor force. Also, some studies [12–14] highlighted that Syrian families trying to survive under difficult conditions with low wages are likely to have to employ their children. Similarly, Kaygısız [15] stated that most Syrian children in Turkey work in fields and gardens in the countryside. Çetin [16] stated that many Syrians work as seasonal workers in the gardens of Mersin, where agriculture constitutes an important economic sector.

Turkey is faced with important problems as a result of changes in the agricultural labor market. The workforce has become dependent on refugees in provinces with large agricultural production like Mersin. Recently, many political parties in Turkey have made statements about the return of refugees to Turkey. The government agrees on the deportation of Syrians but defends the view to extend it over time. In the case that refugees are deported, it is necessary to know the dynamics of the existing agricultural structure and take precautionary measures in order to ensure supply security in agricultural production. Figure 1 shows a banana greenhouse and foreign farmworkers in the research area.

Current studies conducted in Turkey on foreign labor in agricultural production are insufficient. Therefore, it is crucial to conduct a study to determine the current situation and the factors related to the employment of foreign farmworkers. This is the only way to develop proposals to solve problems related to foreign farmworkers in agriculture. The present study aims to determine the socio-economic characteristics of landowners hiring foreign farmworkers and to determine effective factors on landowners' willingness to hire foreign farmworkers. Thus, the reasons why landowners who currently employ foreign farmworkers do so will be put forward and contribute to the literature. In addition, data based on fieldwork will be useful for policymakers for possible policy changes.



Figure 1. Some photos from the research area in Mersin province (photos by authors).

2. Theoretical Background and Hypotheses

After the Syrian civil war in 2013, the number of foreign workers in agriculture increased dramatically with the increase of immigrants entering Turkey. Turkey's humanitarian approach and its "open border policy" have been in place ever since the beginning of the Syrian war. Civilians from Syria were allowed to cross the border legally through some checkpoints, thanks to the policy. However, due to the inadequacy of inspection and control mechanisms after the passage of the immigrants, the number of unregistered foreign workers in agriculture increased dramatically.

In recent times, there has been a growing debate about the return of refugees who have come to Turkey from Syria, where the civil war has ended. The fact that banana production depends on foreign labor raises concerns about the sustainability of agricultural production. For this reason, banana farming was chosen because foreign farmworkers generally work in the production of bananas in Mersin, where a high percentage of refugees live, and banana cultivation is highly intense. This study aimed to test three hypotheses in order to determine the factors affecting the landowners' willingness to sustain hiring foreign farmworkers.

It was stated in a previous study that the presence of migrants has a positive effect on the local economy and, more particularly, on agriculture and construction [17]. Many countries need foreign agricultural workers due to a labor demand that they cannot meet with their population. Therefore, most countries have developed labor migration programs to enable the entrance of essential workers into their country. Foreign workers are employed through international agreements, employer-driven mechanisms, or irregularly [18–22]. However, none of the previous studies associated the socio-economic characteristics of landowners with the employment of foreign workers. This gap will be addressed through this study. For this purpose, Hypothesis 1 (H1) was developed as follows:

H1: *Socio-economic characteristics of landowners have an effect on willingness to sustain hiring foreign farmworkers.*

Syrian refugees are subject to discriminatory practices in terms of lower wages, longer working hours, and improper sheltering conditions [23]. There are studies showing that, despite the critical role of migrant agricultural workers, many workers are employed under poor working conditions and low wages [18,24–26]. Rye and Andrzejewska [22] pointed out that one of the reasons for lower wages is that migrant agricultural workers have few resources to use to negotiate for better wages and that they do not mind their underpayment because they compare their pay with the standards of their own country. Also, there are many studies focusing on the productivity and competitiveness of farms employing

foreigners [27,28]. Baldoni et al. [29] found that migrants working on large farms have higher productivity, while Antonioli et al. [30] revealed the impact on the competitiveness of the migrant workforce through lower labor costs. Similarly, Dedeoğlu [7] explained that one reason for lower wages is that wages vary for different groups of workers, and therefore, the productivity–wage relationship is established. Some studies found that the main reason for farmers hiring foreign farmworkers is low wages [31,32]. In addition, some studies focused on the role of immigrants in the labor supply gap in agriculture. Kasimis et al. [17] argued that there is a long-standing labor shortage in rural areas, and migrant labor contributes greatly by closing this gap and lowering the labor costs of agricultural production. Ertürk [33] stated that Syrian refugees have filled the existing labor gap in agriculture and that they play an important role in ensuring sustainability. Collins et al. [28] asserted that migrants in Australia contribute greatly to the workforce in the agricultural sector. Pappas [34] discussed how immigrants cannot be considered as a strictly agricultural labor force, but, in a broader perspective, they should be seen as a labor force with multiple significant impacts on the economy of rural areas and the society of these areas. In this study, landowners who employ foreign farmworkers were asked about their reasons for hiring them. The answers were collected in three main categories, which are lack of local farmworkers, that foreigners work harder, and that foreigners work cheaper. Thus, the answers were added to the literature. In addition, it was associated with the willingness of the landowner to sustain hiring foreign farmworkers. In parallel with this, Hypothesis 2 (H2) was established as follows:

H2: *Landowners' reason for hiring foreign farmworkers has an effect on landowners' willingness to sustain hiring them.*

Most previous studies on migrants and refugees have mainly focused on interviews to evaluate their circumstances in their host country and their integration process [5,8,27,35–40]. It was realized that no previous papers in the literature investigated the effect of foreign farmworkers' characteristics on landowners' willingness to hire them. This effect has never been explored in any previous study. This gap will be addressed through this study. For this purpose, hypothesis 3 (H3) was developed as follows:

H3: *Some characteristics of foreign farmworkers have an effect on landowners' willingness to sustain hiring them.*

The theoretical framework is shown in Figure 2.

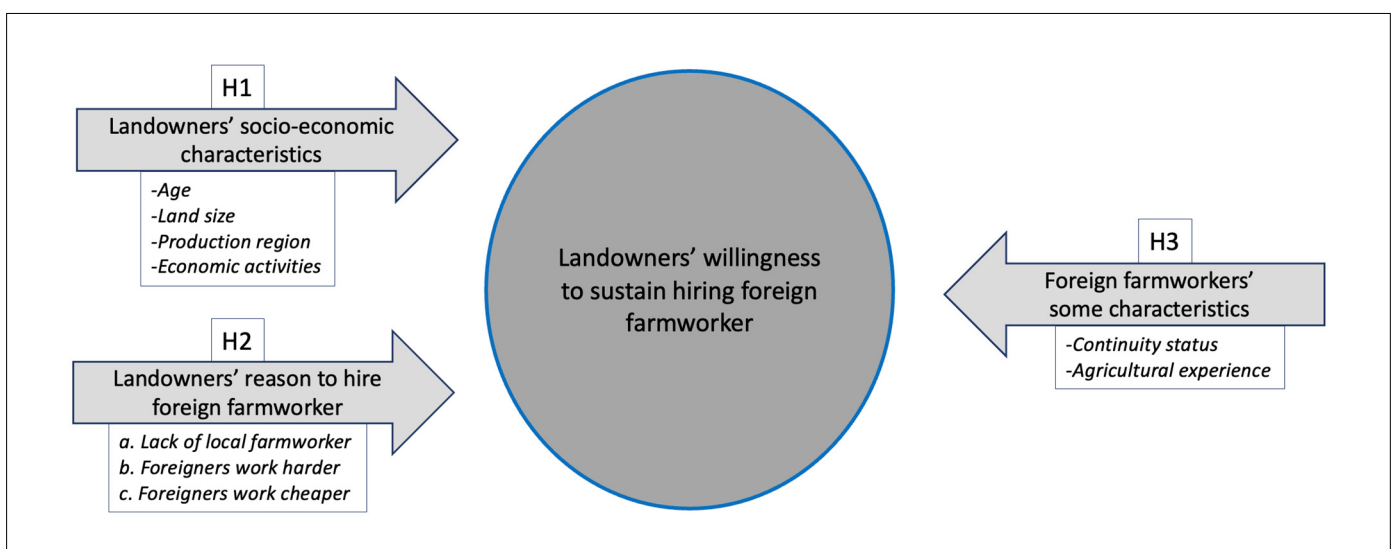


Figure 2. Theoretical framework (designed by authors).

In addition, no previous study has categorized landowners' willingness to employ foreign farmworkers. This study is the first paper, to the best of our knowledge, to run an ordinal logistic regression (OLR) model to understand the effective factors in related research studies. Within such a context, this study aims to contribute to the literature by highlighting the socio-economic characteristics of landowners and effective factors in the willingness of landowners to sustain hiring foreign farmworkers.

3. Materials and Methods

3.1. Study Area

The south of Turkey has become a center of attraction, especially for Syrian refugees, due to reasons like climate, agricultural production potential, and relative ease of living. Mersin is a city that has a big capacity for agricultural production because of its climatic features. This city seems attractive for foreigners due to the abundance of agricultural job opportunities and relatively lower living costs. The Presidency of Migration Management [2] reported that the rate of the number of registered Syrians to the total number of people living in the city is 11.24%, and the age average of Syrians is 21.9 years.

Within the province of Mersin, the Anamur and Erdemli districts were selected. The Anamur district was chosen because it is the district where banana production is most intense. On the other hand, the Erdemli district was included in the research area because it is close to the city center and agricultural production is intense. Especially in the greenhouse cultivation of bananas, despite the high investment costs, local farmers have turned to banana production because they obtain the expected profit in a short time. Figure 3 shows the study area.

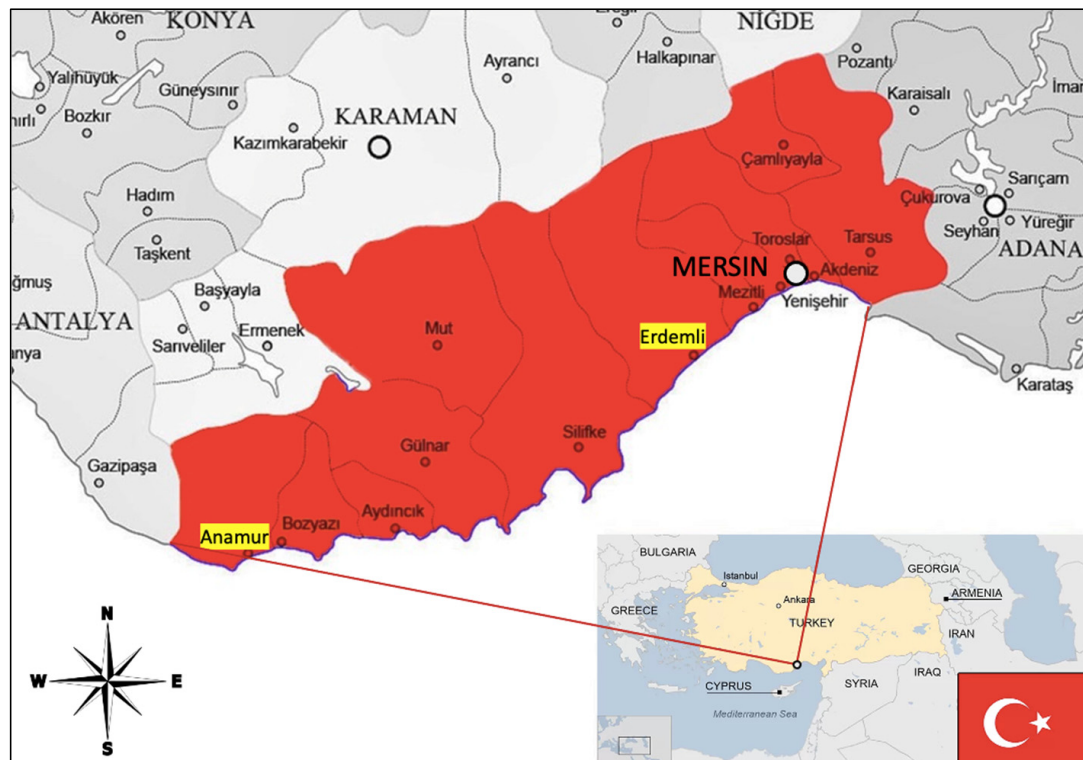


Figure 3. The study area (compiled by the authors).

Table 1 shows the statistics of banana growing in Mersin province. A total of 51.5% of Turkey's banana production takes place in Mersin. A total of 61% of the banana production in the province takes place in the Anamur and Erdemli districts (Table 1).

Table 1. Amount of banana cultivation by district (2021) [41].

District	Cultivation Area (Ha)	Production (Ton)	Yield (kg/Ha)
Yenişehir	1.5	90	60,000
Mezitli	3.3	231	70,000
Toroslar	4.5	270	60,000
Aydıncık	55.0	3300	60,000
Erdemli	199.7	11,888	59,530
Tarsus	289.0	21,675	75,000
Akdeniz	331.6	26,528	80,000
Silifke	500.0	40,000	80,000
Bozyazı	1065.0	85,200	80,000
Anamur	3247.0	265,469	81,760
Mersin Province Total	5596.6	454,651	-
Turkey Total	12,286.4	883,455	-

3.2. Sampling Method and Data Collection

Snowball sampling may be applied as a more formal methodology for making inferences about a population of individuals who have been difficult to enumerate through the use of descending methods such as household surveys [42,43]. The method is one of the nonprobability sampling methods and is a useful choice of sampling strategy when the population is difficult to reach [44]. Mathematical theories on which probability sampling methods are based do not exist in the non-probability sampling method [45]. The sample size in the snowball sampling method is determined as the saturation level that the researcher considers sufficient [46].

We aimed to reach banana producers hiring foreign farmworkers. The number of landowners who are banana producers and also hiring foreign workers is unknown. Since it is not possible to reach the list of the target population, the snowball sampling method was used. The sample size was determined after eliminating farmers for various reasons, such as extreme or identical answers in one chapter and failure to complete the survey. A total of 200 farmers, all of whom were recruited by the snowball sampling method, participated in this study. The features that were sought in these farmers were being landowners, employing at least one foreign farmworker, and being located in the Anamur or Erdemli districts. The survey study was conducted with these farmers who could be reached for and accepted face-to-face interviews (Table 2).

Table 2. Distribution of the number of surveys by region.

Region	Number of Surveys	Rate (%)
Anamur district	120	60.0
Erdemli district	80	40.0
Total	200	100.0

A specific survey was used to collect the research data. The survey was designed for the purpose of the research after scanning the previous related studies. The final form was developed after the pilot test was conducted on the volunteers. Thus, questions developed for targeted data were tested. The survey study was conducted in September 2022, and it lasted 3 weeks. The design of the questionnaire is highlighted in the following sections: socio-economic characteristics, agricultural production characteristics, and employment of foreign labor. The sections were designed to determine some factors such as age, gender, education, agricultural experience, number of employees, the profitability of the business, and cultural features of landowner farmers and to find out the statistical relationship between them.

3.3. Analytical Model

The OLR model is applied to predict the ordinal level of dependent variables with a set of independent variables. In the model, the dependent variable has more than two categories, and these categories are sortable [47]. Methods using the ordinal scale allow for a more comprehensible description of the data and allow stronger inferences about population characteristics. In all fields of study, ordinal scales arise when the values of continuous variables are measured or summarized by researchers by narrowing them into a set of categories. To reduce subjectivity in the social sciences, it is useful to guide ordinal scales about what categories represent [48]. The application of linear and logistic regression models largely depends on the dependent variable and the provision of model assumptions. Despite the prevalence of linear regression, binary logistic regression, and multivariable logistic regression techniques, OLR analysis is the only alternative technique in studies where the dependent variable has a clear ordering of the category levels [49]. OLR models have mainly been applied in social sciences, and these are very suitable for willingness analysis because surveys are generally conducted by using ordinal verbal scales of measurement.

The model developed by McCullagh [50] is based on the assumption that there is an unobservable latent variable under an observable categorical variable. In this model, it is assumed that there is an unobservable latent variable (Y^*) that can take values between $-\infty$ and $+\infty$ under the observable ordered categorical dependent variable (Y). The formula for the unobservable latent variable is shown below.

$$Y_i^* = \beta'_{x_i} + u_i \quad (1)$$

In Equation (1), Y_i^* is the latent variable, β is the regression coefficient, x_i is the independent variables, and u_i is the error term.

The formula for the OLR model is shown below.

$$\text{link}(\gamma_j) = \tau_j - \sum \beta'_k x_k \quad (2)$$

In Equation (2), γ_j is j . cumulative probability value for the category, τ_j is j . threshold value of the category, and β_k is the regression coefficient.

A generalized OLR model is used if the different values of the independent variables are higher in different categories of the dependent variable. This regression model is valid when the ordinal dependent variable has three or more categories [50,51].

The formula for the generalized OLR model is shown below.

$$\text{link}(\gamma_j) = \frac{\tau_j - (\beta_0 + \dots + \beta_k x_k)}{\exp(\theta_0 + \dots + \theta_l z_l)} \quad (3)$$

In Equation (3), γ_j is j . cumulative probability value for the category, τ_j is j . threshold value of the category, β_0 and β_k are regression coefficients, x_k is the number of independent variables, k is the explanatory variables, β and θ are unknown location and scale parameter vectors, τ_j is the unknown breakpoint vector, and z_l is the explanatory variable for scale parameters.

Five basic link functions are used to obtain the OLR model. The most used functions are the logit, probit, and cloglog functions [52]. In the OLR model, there is often no clear consideration of which link function to choose. In this study, the logit connection function shown below is used for the model.

$$\log\left(\frac{x}{1-x}\right) \quad (4)$$

In Equation (4), x is the probability of an event occurring.

The parameter statistical significance is verified by the Wald test, distributed according to a chi-square distribution [53]. It is necessary to assess whether the model with all

estimators improves the prediction ability of the baseline model through the comparison of log-likelihood by chi-square to test. Log-likelihood, Pearson chi-square, and Pseudo R square are used to measure the model results. Log-likelihood is a measure of how well all of the independent variables affect the outcome or dependent variable. This can be assessed by comparing the fit of the null model and the given model. The likelihood of the null model is the likelihood of the observation if the independent variables had no effect on the outcome. Pseudo R square test was used to indicate the proportion of variance in the dependent variable [54–56]. Pearson’s chi-square test and deviance chi-square test are applied to evaluate the goodness of fit. These tests check whether the estimations of the model are consistent with the observed data. The null hypothesis is that the fit of the model is good. If the null hypothesis is not rejected (p -value > 0.05), then it is concluded that there is no significant difference between the observed data and the model predictions. However, if the null hypothesis of these tests is rejected (p -value < 0.05), then the model does not fit the observed data appropriately [57,58]. In order to interpret the parameters of the OLR analysis, it is necessary to find the odds ratio of the estimation values, as well as to determine the reference categories. Interpretations are made with the odds ratio according to the determined reference categories. The reference category allows the interpretation of other categories according to one of the categories of a variable. This analysis of parameter significance is called interpretation by the odds ratio [59,60].

3.4. Variables Used in the Ordinal Logistic Regression Model

The dependent and explanatory variables used in the OLR model are shown in Table 3. The dependent variable is the willingness to hire foreign farmworkers, which consists of three ordinal categories. The categories are low, medium, and high. Explanatory variables are land size, landowner’s age, production region, type of production, continuity status of the foreign farmworkers, agricultural experience, and the reason for hiring foreign farmworkers.

Table 3. Description of ordinal logistic regression model parameters.

Dependent Variable	Type	Explanation
Willingness level	Dummy	1: Low 2: Medium 3: High
Explanatory variables	Type	Explanation
Land size	Continuous	Da
Landowner’ age	Continuous	Year
Agricultural experience of foreign farmworkers	Continuous	Year
Landowner’s economic activities	Categorical	1: Only banana producer 2: Also retired 3: Also non-farm business
Continuity status of foreign farmworkers	Dummy	1: At least one permanent 0: Only temporary
Production region	Dummy	1: Anamur district 0: Erdemli district
The reason for hiring foreign farmworkers	Categorical	1: Lack of local farmworkers 2: Foreigners work harder 3: Foreigners work cheaper

Since the main purpose of the study is to determine the factors affecting the willingness of the landowners to sustain hiring foreign farmworkers, it is important to measure the willingness carefully. While designing the research, it was assumed that landowner farmers, with whom the interview would be conducted, could not be against a foreign workforce because they already employed foreign farmworkers. The needs, perceptions, and expectations of local landowner farmers may differentiate their willingness to sustain hiring foreign farmworkers. In this context, the distinction between landowner farmers

can only be revealed in the degree of willingness to hire foreign farmworkers. Therefore, the 3-point Likert was modified in accordance with the research and used to measure the degree of willingness expressed by landowner farmers in self-reports. The Likert scale was originally developed by Likert [61] to measure the attitude of individuals toward a certain phenomenon. From that time on, the use of the Likert Scale had spread to various fields such as education, management, leadership, medicine, and agriculture [62].

3.5. Definition and a Priori Expected Signs of the Explanatory Variables Used in the Model

The effects of some selected variables on the willingness of landowners to sustain hiring foreign farmworkers were tested according to H1, H2, and H3. Figure 4 presents the structure of the ordinal logistic regression model used in the study.

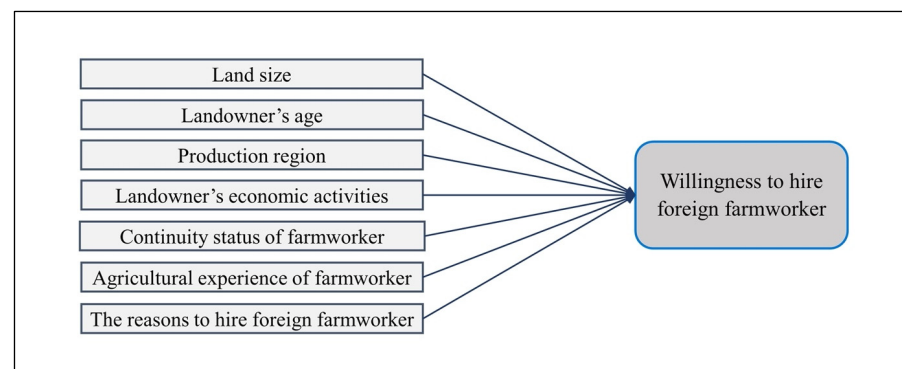


Figure 4. Structure of ordinal logistic regression model used in the study.

Land size, landowner's age, production region, and landowner's economic activities are the variables of landowners' socio-economic characteristics used in the H1. All these variables were expected to be more likely to be at a high willingness level because, as the land size increases, the natural consequence of the increase in the need for labor is the increase in the desire to employ foreign workers alongside natives. Likewise, as the landowner's age increases, the need for workers to be employed is expected to increase. While the district of Erdemli is very close to the city center, where foreign workers live in high concentration, Anamur is the farthest city from the center. For this reason, the willingness of the landowners living in Erdemli was expected to be higher, as it would be easier to find foreign workers there. Also, those who are retired or engaged in non-farm businesses besides banana production were expected to have a higher willingness to employ farmworkers because their work performance alone is more limited.

The reasons for hiring foreign farmworkers are used in the H2. The trial questionnaires were conducted before the start of the survey study. As a result of the interviews, the reasons for employing foreign farmworkers were grouped under three categories. In this way, these three-option questions about reason were asked to the landowners, and the answers were used in the model. The reasons were the lack of local farmworkers, the fact that foreigners work harder, and that foreigners work cheaper. All these reasons were expected to raise the willingness to hire foreign farmworkers. While the first reason explains a necessity for the business, the other two reasons are related to the efficiency of the business.

Continuity status and agricultural experience are the variables of farmworkers' socio-economic characteristics used in the H3. Continuity status consists of two options, which are permanent and temporary. Permanent farmworkers were expected to increase the landowners' willingness to sustain hiring them. Landowners with large land may especially demand permanent workers. In addition, farmworkers with more experience in agricultural production were expected to increase landowners' willingness, as it may be a productivity-enhancing factor.

4. Results

4.1. Socio-Economic Characteristics of Landowners

The socio-economic statistics of the respondents are presented in Table 4. The respondents have an average age of 40.5 years. Regarding the education level of the respondents, 7.5% have no education, 47% have a primary school degree, 36.51% have a secondary school degree, and 9% have a university degree. The respondents have an average agricultural experience of 11.07 years. The majority (64.5%) of them are only engaged in the banana production business, 27.5% of them are retired, and 8% of them also work in non-agricultural jobs.

Table 4. Socio-economic characteristics of landowners.

Variables	Categories	Frequency	Percentage (%)
Age (Mean: 40.50 years) (Std. Dev.: 9.49 years)	≤34	58	29.0
	35–45	78	39.0
	46≤	64	32.0
Education level	Uneducated	15	7.5
	Primary school	94	47.0
	Secondary school	73	36.5
	University	18	9.0
Agricultural experience (Mean: 11.07 years) (Std. Dev.: 6.89 years)	≤5	53	26.5
	6–15	96	48.0
	16≤	51	25.5
	Only banana farmer	129	64.5
Economic activities	Also retired	55	27.5
	Also non-farm business	16	8.0

4.2. Some Important Statistics of Agribusinesses and Farmworkers

Table 5 shows some important statistics about agribusiness. The average land size is 3.80 da. The average farmworker's agricultural experience is 8.31 years. While 20.5% of farmworkers work permanently, 79.5% of them work temporarily. While the vast majority (79.5%) of the agribusinesses hire only temporary workers, the rest (20.5%) employ at least one foreign farmworker with a permanent contract (if there is/are temporary farmworker(s) besides permanent farmworker(s), they also included this category). Lastly, 12% of farmworkers do not have a permit to work in agricultural work.

Table 5. Some important statistics of agribusinesses.

Variables	Categories	Frequency	Percentage (%)
Land size (Mean: 3.80 da) (Std. Deviation: 3.09)	≤3	126	63.0
	4–6	49	24.5
	7≤	25	12.5
Agricultural experience of foreign farmworkers (Mean: 8.31 years) (Std. Deviation: 5.63)	≤5	70	39.5
	6–10	60	30.0
	11≤	61	30.5
Continuity status of foreign farmworkers	At least one permanent	41	20.5
	Only temporary	159	79.5
Foreign farmworkers' work permit status for agriculture	No	24	12.0
	Yes	176	88.0

4.3. Landowners' Opinion about Foreign Farmworkers

The opinions of landowner farmers about foreign farmworkers and their willingness to hire them are shown in Table 6. The majority (63%) of respondents employ foreigners because they could not find local farmworkers. While 17.5% of them said that foreigners work harder with fewer demands, 19.5% said that foreigners work cheaper. A study

also reported that recent trends show that farmers could not continue their businesses without employing foreign labor [63]. All these issues must be taken into consideration by governmental authorities to extend sustainable agriculture among tea farmers in the region.

Table 6. Landowners' opinion about foreign farmworkers.

Variables	Categories	Frequency	Percentage (%)
The reason for hiring foreign farmworkers	Lack of local farmworkers	126	63.0
	Foreigners work harder with less demand	35	17.5
	Foreigners work cheaper	39	19.5
Willingness to hire foreign farmworkers	Low	41	20.5
	Medium	59	29.5
	High	100	50.0

Since all respondents employ foreign agricultural workers voluntarily, it was assumed that all of them were willing to employ foreign agricultural workers. A question was asked to reveal the degree of their willingness. It was determined that 50.0% of respondents are in the high category, 29.5% of them are in the medium category, and 20.5% of them are in the low category.

4.4. Results of the Ordinal Logistic Regression Model

Although there are various studies [64–67] regarding foreign farmworkers and seasonal farmworkers, there has not yet been any study about local landowner farmers' willingness to sustain hiring foreign farmworkers.

The OLR model was preferred in accordance with the research variables. Willingness level, which constitutes three categoric variables, which are low (level 1), medium (level 2), and high (level 3), was used as the dependent variable. In addition, explanatory variables are the landowner's age, land size, the agricultural experience of the farmworker, the landowner's economic activities, production region, continuity status of the farmworker, and the reason for hiring a foreign farmworker. According to the findings, some explanatory variables such as land size ($p < 0.01$), continuity status of farmworker ($p < 0.05$), and the reason for hiring foreign farmworkers ($p < 0.01$) were found to have a significant effect. The other explanatory variables in the model, which are the landowner's age, the agricultural experience of the farmworker, the landowner's economic activities, and the production region, were found to be non-significant (Table 7).

Land size was a significant positive predictor of willingness level. An increase in land size (expressed in da) was associated with an increase in the odds of willingness level, with an odds ratio of 2.141 (Wald $\chi^2 = 29.003$; $p = 0.000$). This indicated that a landowner farmer having higher agricultural land was more likely to have a higher willingness level to hire foreign farmworkers. One possible reason for this is that larger agricultural businesses, which are generally not family businesses, may be prone to needing more outside farmworkers. On the other hand, the landowner's age, the landowner's economic activities, and the production region were not associated with the landowners' willingness level to sustain hiring foreign farmworkers in Mersin. Based on this result, hypothesis H1 can be partially accepted.

The reason for hiring foreign farmworkers, of which the reference category was category 3, was a significant predictor of willingness level. Categories were examined according to the reference category, and it was determined there was a significant relationship between category 1 and category 3 (Wald $\chi^2 = 29.249$; $p = 0.000$) and also between category 2 and category 3 (Wald $\chi^2 = 17.501$; $p = 0.000$). Based on this result, hypothesis H2 can be accepted. The odds of category 1 having a higher willingness level was 12.271 times that of category 3. This indicated that landowner farmers with the opinion that there was a lack of local farmworkers were more likely to have a higher willingness level compared to those with the opinion that foreigners work cheaper. The odds of category 2 having a higher willingness level was 9.372 times that of category 3. This indicated that landowner farmers

with the opinion that foreigners work harder were more likely to have a higher willingness level compared to those having the opinion that foreigners work cheaper. Contrary to the general opinion, which is that foreign farmworkers are used as a cheap labor force, this research found that the first reason for hiring foreign farmworkers was that landowner farmers have difficulty finding local farmworkers in Mersin.

Table 7. Result of the ordinal logistic regression model.

Variables	Categories	Estimate (β)	Std. Error	Sig. (p)	Odds Ratio (e^{β})
Landowner's age		−0.013	0.028	0.646	0.987
Land size		0.761	0.134	0.000 *	2.141
Agricultural experience of farmworkers		0.035	0.035	0.316	1.035
Landowner's economic activities	1: Only banana producer	0.229	0.635	0.130	1.257
	2: Also retired	0.203	0.801	0.064	1.225
	3: Also engaged in non-farm business (reference)				
Production region	1: Anamur	−0.152	0.361	0.177	0.859
	0: Erdemli (reference)				
Continuity status of foreign farmworker	1: At least one permanent	1.377	0.546	0.012 **	1.249
	0: Only temporary (reference)				
The reason for hiring foreign farmworkers	1: Lack of local farmworkers	2.507	0.463	0.000 *	12.271
	2: Foreigners work harder	2.238	0.539	0.000 *	9.372
	3: Foreigners work cheaper (reference)				

Significance level: * p -value < 0.01; ** p -value < 0.05.

The continuity status of a foreign farmworker, of which the reference category was only temporary status, was a significant predictor of willingness level. When the continuity status was examined according to the reference category, it was determined that there was a significant relationship between category 1, which was at least one permanent farmworker, and category 0, which was only temporary farmworkers (Wald $\chi^2 = 6.276$; $p = 0.012$). The odds of category 1 having a higher willingness level was 1.249 times that of category 0. This indicated that a landowner employing at least one permanent foreign farmworker was more likely to have a higher willingness level to hire a foreign farmworker compared to one employing only temporary farmworkers. The researchers' conclusion on this result was that the reason for higher willingness to hire foreign workers was that those who employ permanent workers were constantly dependent on the worker. However, the agricultural experience of farmworkers was not associated with landowners' willingness to sustain hiring foreign farmworkers in Mersin, showing that H3 can be partially accepted.

A test of model fitting information was performed. It is a useful test if there is a significant improvement in the fit of the final model relative to the Intercept-only model. In this analysis, it was found that there was a significant improvement in the fit of the final model over the null model [$\chi^2(9) = 132.283$; $p = 0.000$]. The goodness of fit was calculated. Non-significant test results are the indicators that the model fits the data well [22,26]. In this analysis, it was found that both the Pearson chi-square test [$\chi^2(373) = 336.271$; $p = 0.914$] and the deviance test [$\chi^2(373) = 274.802$; $p = 1.000$] are both non-significant. These results suggest a good model fit. Pseudo-R square values were calculated. Pseudo-R square values are used by some to assess model fit by determining the effect size of the model. Pseudo R square statistics were as follows: Cox and Snell, 0.484; Nagelkerke, 0.554; and McFadden, 0.321. Hahs-Vaughn and Lomax [65] and Pituch and Stevens [66] stated these values are treated as rough analogs to the R-square value in OLR. The parallel line assumption is based on the condition that the estimated values of the parameters pass through the same cutoff point for all categories of the dependent variable. When the result of the test of Parallel lines indicates non-significance, it means that the assumption is satisfied [67]. In this analysis, it was found that the Pearson chi-square test [$\chi^2(9) = 9.168$, $p = 0.422$] is non-significant. It was interpreted that the assumption was satisfied.

5. Discussion

This paper presents findings regarding landowners' willingness to sustain hiring foreign farmworkers and the effective factors of this willingness. Immigrants tend to either turn to jobs where there is a shortage of skilled labor or to informal, insecure, and temporary jobs mostly performed by unskilled labor [7]. Agricultural production, which is seen as a low-paid, low-skilled job in countries receiving foreign migration, is a sector predominantly employing foreign farmworkers [68]. Parallel to this, it was reported that Syrian refugees face unfair working conditions in terms of wages, working hours, and accommodation in the sites at Mersin [23]. Firstly, it must be emphasized that only 20.5% of landowners are in the low category of willingness to sustain hiring foreign farmworkers. The majority of them are highly or moderately willing to hire foreign farmworkers. As to the reason for sustaining hiring foreign farmworkers, 63% of landowners stated that they could not find local farmworkers, showing a large labor shortage in the agricultural field. This is due to the rapid urbanization of the region and the large labor shortage in the agricultural field as local farmworkers move to different sectors. Contrary to this result, Cento and Bahşi [32] stated that the main reason for the preference for refugee workers is low wages (78.8%), and some other studies also reported that Syrian migrants generally become laborers for low wages [23,68–70]. The fact that foreign workers work with low wages does not contradict the fact that there is a labor shortage. In addition, it was detected that landowners who indicate the reason for hiring foreign farmworkers as “foreigners work harder” are more willing to sustain hiring than those who indicate “foreigners work cheaper”. The point to be emphasized is the fact that foreigners working for cheaper is not the main determinant. Lastly, findings that have no equivalent in the literature are that landowners having larger land are more willing to sustain hiring foreign farmworkers, and landowners are willing more to sustain hiring permanent farmworkers. As the size of the enterprise increases, more farmworkers are needed, and as the size of the workforce requirement increases, the need for permanent farmworkers increases. It is estimated that this is the motivation behind the increased willingness to hire foreign farmworkers.

6. Conclusions and Recommendations

Globalization causes human mobility to be experienced at the fastest and highest level. The visibility of migration has increased in the international arena, and human mobility between borders has both increased and diversified. In recent years, Turkey has hosted the highest number of Syrian refugees in temporary protection status in the world, as well as an increasing number of irregular migrants from Central Asia, particularly Afghanistan. These people work mostly in provinces such as Mersin, which have high agricultural production, relatively cheaper life, mild weather, and closeness to the border. Recently, Turkish authorities have been making statements regarding the return of refugees under a program. The possible problem of food security resulting from the deportation of these people has been discussed recently. It is necessary to understand the reasons for hiring foreign farmworkers. In this way, it is possible to forecast the impact of possible policy changes. This study showed that the main reason for hiring foreign farmworkers is the deficit in the agricultural labor market, which is the basic input in agricultural production. In order to avoid some problems regarding agricultural production resulting from labor shortages, related policies should be developed urgently based on field data. This study presents data revealing why landowners employ foreign farmworkers and what factors affect their willingness to employ them. It is recommended that Syrian refugees' access to the agricultural labor market must be approved subject to certain conditions that policymakers should address and formalize to eliminate informal employment. Every foreign farmworker must be registered with one or more agricultural holdings. They should only be officially allowed to work in the agricultural sector as long as no adverse events occur. Otherwise, the agricultural labor market will become more deregulated, negatively impacting both native and foreign farmworkers. In addition, citizens seeking employment

from other regions of Turkey may be supported to be farmworkers in cities like Mersin, in which agricultural production is highly dependent on foreign labor.

Future studies should be conducted with landowners who do not hire foreign farmworkers. A comparison of these landowner profiles will contribute to the literature. In addition, it is necessary to work with refugee farmworkers. Additionally, similar studies should be performed in western provinces where sociodemographic characteristics are different and agricultural activities are present.

This study has some limitations. The most important limitation is that the study specifically focused on landowners hiring foreign farmworkers. Another limitation of the current study is that this study could be carried out only in Mersin province. The weakness of the study is that random sampling cannot be made due to unregistered foreign farmworkers.

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