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EFFECTS OF LAND CONSOLİDATİON ON AGRİCULTURAL ENTERPRİSES İN CİHANBEYLİ DİSTRİCT, TÜRKIYE: AN EVALUATİON FROM THE PRODUCER PERSPECTİVE

Şinasi AKDEMIR, Ufuk GÜLTEKIN, Kasım Eren TUNA, Issaka Saidou ISMAILLA

University of Cukurova, Department of Agricultural Economics, 01330, Adana, Turkey, E-mails: sinasi.akdemir@gmail.com, ugultekin@gmail.com, erentun@hotmail.com, issaka.saidou.ismailla@gmail.com

Corresponding author: sinasi.akdemir@gmail.com

Abstract

This study examines the effects of land consolidation works carried out in Cihanbeyli district to provide solutions to important structural problems in Turkey's agricultural enterprise structure. The aim of the research is to evaluate in detail the socioeconomic effects of the consolidation process on farmers' land holdings and number of parcels and the legal dimensions of the process. The study was carried out using multi-layered data sources such as land registry and cadastral records, court cases and field observations, as well as surveys conducted with 26 farmers in villages such as Damlakuyu, Karatepe, Sağlık, Ülerziktepe and Taşpınar in Cihanbeyli district. The research was supported by various statistical tests such as regression analyzes and Wilcoxon Sign Test using the SPSS version 25 statistical package program. Analyzes revealed that there is a significant relationship between factors such as education level, agricultural experience and number of tractors and changes in farmers' land holdings and number of parcels after land consolidation. Satisfaction levels were found to be closely related to the success of the land management and consolidation process, and it was also emphasized that cooperative membership and participation in agricultural training programs were effective in the success of this process. Findings highlight challenges and opportunities associated with land consolidation, including concerns about property rights, legal disputes, and infrastructure development. Despite some dissatisfaction among farmers, the research underscores the potential of consolidation in enhancing agricultural productivity and informing policy decisions for rural development strategies. The study provides valuable insights into the development of agricultural policies and rural development strategies and guide policy makers and practitioners for the effective management of consolidation processes. The research provides a scientific basis for future applications by illuminating the factors that will increase farmer satisfaction and the effectiveness of the consolidation process.

Key words**:** *land consolidation, farmer's satisfaction, agricultural productivity, socio-economic impacts, statistical analysis, legal issues, regression analysis, Wilcoxon Sign Test*

INTRODUCTION

Land consolidation refers to a process of reorganizing and restructuring fragmented land holdings within a specific area to create larger and more cohesive agricultural units. The goal is to improve the efficiency, productivity, and overall sustainability of agricultural land use. This process typically involves redistributing land parcels, adjusting property boundaries, and optimizing the layout of agricultural holdings. The specifics of land consolidation can vary significantly depending on the legal, social, and economic context of each country [6]. Land consolidation aims to increase farm size and efficiency, leading to economies of scale and increased productivity. It also improves infrastructure, such as irrigation systems and roads, and enhances environmental sustainability. Legal and regulatory frameworks are crucial for successful consolidation efforts. Social and economic considerations, such as displacement of smallholders or landless individuals, should be addressed. Technological integration, such as Geographic Information System mapping, can aid in planning and implementing land consolidation projects [16].

Various countries have implemented land consolidation initiatives tailored to their specific needs. For instance, several European countries boast a rich history of successful land consolidation. Germany, renowned for its well-established tradition of land

consolidation called "Flurbereinigung," focuses on the reorganization and consolidation of fragmented land parcels to create more extensive and efficient agricultural units [20]. The Netherlands, with its "Land Consolidation Act," has a history of initiatives aimed at enhancing the spatial organization of agricultural land [22]. Hungary, too, has implemented measures to improve agricultural efficiency and land use through land consolidation projects, restructuring holdings to form larger and more efficient farms. These projects often entail the redistribution of fragmented and scattered land parcels to create consolidated, contiguous plots [17].

China has embarked on land consolidation projects to enhance the efficiency of agricultural land use, frequently involving the merging of small land parcels into larger, more manageable units [4]. Additionally, South Korea, in the aftermath of the Korean War (1950-1953), underwent substantial land reforms and consolidation efforts. The country grappled with a situation where agricultural land was fragmented into small, inefficient plots, impeding modernization and mechanization in agriculture. To address this, the government implemented land redistribution programs aimed at consolidating small land holdings into larger units, fostering equitable distribution. Investments in rural infrastructure enhanced farming practices and market access. Adoption of modern farming technologies, coupled with larger fields, facilitated ease of use. Supportive policies encouraged farmer participation, and community involvement ensured that consolidation efforts aligned with local needs and aspirations. Notably, the "New Community Movement" (Saemaul Undong) included initiatives to consolidate small and scattered land parcels for more efficient agricultural management [6]. (14, 15, 13. It's crucial to acknowledge that the implementation and success of land consolidation programs can vary based on the specific social, economic, and institutional contexts of each country.

Land consolidation work first started in 1961 in Turkey. Studies were carried out by various general directorates affiliated with the Ministry of Agriculture. Finally, with the amendment made on 2.7.2018 in Law No. 6200 on the "Organization and Duties of the General Directorate of State Hydraulic Works," the authority to implement land consolidation was given to the General Directorate of State Hydraulic Works (DSI). In the Additional Article 9 of the Law, the purposes of land consolidation practices are given as follows [10]: “Preventing the deterioration and fragmentation of lands by natural and artificial effects, in fragmented lands, combining more than one land plot by considering their natural characteristics, usage integrity, and property rights, creating new parcels that are more functional in terms of economic, ecological, and social aspects, and determining the usage patterns of these parcels by evaluating the land characteristics and area. Land consolidation is carried out to provide village and land development services [11].

One of the primary challenges in the Turkish agricultural sector is the fragmented and dispersed ownership structure of enterprises [9]. Agricultural land in the country has diminished and fragmented for various reasons, resulting in productivity and profitability levels far below their potential. The reduction in farm size poses a hindrance to the practice of economically viable agriculture [19, 1]. Moreover, due to inheritance, agricultural enterprises undergo division, proliferating in number, and deviating from economic scales [3]. Agricultural enterprises in Turkey exhibit fragmentation and insufficient scale. The land allocated for producer-based activities is limited and spread across numerous small parcels, presenting challenges in establishing robust businesses and attaining the anticipated production performance [2].

In Turkey, challenges such as land scarcity, an uneven distribution of land ownership, and the presence of small, fragmented, scattered, and irregular parcels contribute to increased investment costs, labor expenses, and time requirements within the production system [21]. Land consolidation has emerged as a crucial tool for addressing the shrinkage,

fragmentation, and irregularity of agricultural land [19]. Studies indicate that a typical farmer in Turkey possesses approximately six different land parcels with varying sizes and characteristics. Those owning only one parcel represent the lowest percentage at 9.46%, while those with 2–9 parcels account for 70.84%, and individuals with more than 10 parcels make up 19.70%. The agricultural community is distributed across around 4,000,000 parcels. The management of fragmented land incurs high costs, impeding the achievement of high yields. The challenge lies in the inability to conduct efficient farming across parcels with diverse locations, sizes, qualities, and shapes, consequently hindering the realization of the desired yield [9].

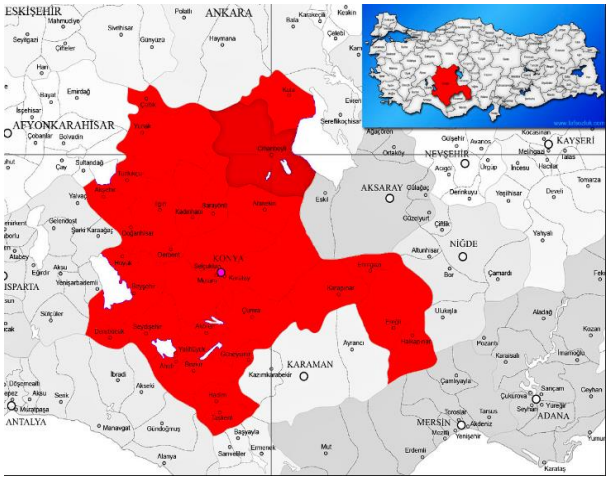
In the Cihanbeyli district, various challenges and implications have surfaced. Farmers frequently encounter a decrease in the number of individual land parcels they own due to consolidation. This can result in a significant alteration in the structure of their land holdings, potentially impacting their capacity to oversee diverse crops or participate in specialized farming practices. The consolidation process may also influence the traditional patterns of land inheritance, presenting challenges for generational farming and the passing down of agricultural assets. Additionally, the legal aspects of the consolidation procedure give rise to questions about property rights, land tenure, and the rights of individual farmers. Concerns may emerge regarding the fairness and transparency of the consolidation process, potentially leading to disputes and conflicts among farmers, particularly if the compensation mechanisms for land redistribution are perceived as unjust. A thorough examination of the legal framework governing the consolidation process is essential to ensure that it safeguards the rights and interests of farmers. Provisions related to compensation, land valuation, and the participation of farmers in the decision-making process are critical aspects that demand attention to address potential grievances and ensure the sustainability of agricultural communities. This study investigates the impact of land consolidation initiatives in the Cihanbeyli district, aiming to address critical structural challenges in Turkey's agricultural sector. The research focuses on a comprehensive evaluation of the socioeconomic effects of the consolidation process on farmers' land holdings, parcel numbers, and the legal aspects of the procedure.

MATERIALS AND METHODS

The research was carried out in the villages of Damla Kuyu, Sağlık, Karatepe, Üzerliktepe, Taşpınar, Yapalı and Günyüzü. First, there is a total of 219,992 decares of land in Cihanbeyli district, which constitutes 9.7% of Konya's agricultural land and 1% of Turkey. (Map 1).

The total population of these villages is 6628 and this population includes approximately 9% of the Cihanbeyli district. One of the important issues to be taken into consideration in the consolidation process is the residence status of the residents of the neighborhood in summer and winter. In addition, the number of farmers and the proportion of the neighborhood population living abroad, in the district and in the city are also important issues. Although the rate of people residing abroad varies by village, it is generally around 10%. The rate of people residing in the district is 21%, and the rate of people residing in the city is 16%. The most important reason for residing outside the neighborhood is job opportunities (54%), followed by education (10-30%) and health (16%). In recent years, new construction has been seen in neighborhoods, especially those living abroad, who have built new houses, and these new house construction rates are generally around 5%. SPSS version 25 statistical package program was used for statistical analysis. Normality tests of the scores of the scored questions in the survey were made with the Shapiro-Wilk Test and it was found that the scores were not normally distributed. In the study, the difference test for the average number of parcels before and after consolidation was performed with the Wilcoxon Sign Test due to the dependent

sample [12]. The differences between the satisfaction and dissatisfaction with consolidation and the average scores given by the subjects to the items regarding the land consolidation in their neighborhood were investigated by applying two-group independent sample Mann- Whitney Tests. The significance level was taken as 0.05 for all tests performed [7].



Map 1. Map of Cihanbeyli district of Konya Province, Turkey
Source: [23].

RESULTS AND DISCUSSIONS

Table 1 presents the frequency distribution of specific variables, including measures of central tendency and dispersion, revealing the distribution of participants across factors such as age, experience, land availability, number of parcels, and number of tractors.

The analysis indicates that participants have an average age of 56.48, with ages ranging from 30 to 74 and a standard deviation of 12.08, illustrating variability in age distribution.

The average experience level is 31.12, ranging from 10 to 55, with a standard deviation of 12.95, indicating variation in experience levels.

Post-consolidation, participants held an average of 4.40 parcels, compared to 2.80 parcels pre-consolidation, consistent with findings by [18], indicating a decrease in parcel numbers.

On average, participants own 1.08 tractors, though some do not own any.

The average land ownership is 335.20 decades, but the high standard deviation of 280.33 suggests considerable variability, with some owning large plots and others smaller ones.

Table 1. The distribution of the participants in terms of factors

Variables	N	Minimum	Maximum	Average	Standard deviation
Age	25	30	74	56.48	12.08
Experience	25	10	55	31.12	12.95
Land asset	25	72	1,000	335.20	280.33
Number of parcels after consolidation	25	1	12	4.40	2.97
Number of parcels before consolidation	25	1	6	2.80	1.58
Number of tractors	25	0	3	1.08	0.64

Source: Results from the survey.

Table 2 illustrates that the majority of the participants were married and had a secondary or high school education. Most of their main occupation is farming.

The majority of survey participants showed interest and took out insurance.

And then, the rates of cooperative membership and receiving education in the last year are low.

Table 3 shows that one of the most important questions stated by the producer's regarding consolidation was the change of hands of treasury lands.

In some villages, treasury lands were left in place to avoid problems due to ownership issues, while others were gathered in some villages, so these new lands created both problems and new riches.

The unit that carried out the consolidation was at its discretion. treasury lands were left in their old places in some villages, so no problem of ownership was created.

Table 2. Socio - Economic Characteristics

Variables		Frequency	Percentage
Neighbourhood	Damlakuyu	8	32
	Karatepe	4	16
	Health	4	16
	Taşpınar	2	8
	Ülerziktep	2	8
	since done	5	20
	Total	25	100
Marital status	Married	23	92
	Single	2	8
	Total	25	100
Education	Primary school or less than primary school	10	40
	Middle School-High School	13	52
	Associated degree and above	2	8
	Total	25	100
Main Profession	Farmer	11	44
	Officer	3	12
	Employee	1	4
	Tradesman-Merchant	7	28
	Retired	3	12
	Total	25	100
Interest	Yes	23	92
	No	2	8
	Total	25	100
Residence	Province	1	4
	City+District	1	4
	District	3	12
	Neighbourhood	11	44
	District+Province	8	32
	Abroad	1	4
	Total	25	100
farming	Yes	5	20
	No	20	80
	Total	25	100
Credit Paid	Yes	13	52
	No	12	48
	Total	25	100
Insurance	Yes	15	60
	No	10	40
	Total	25	100
Co-op Membership	Yes	7	28
	No	18	72
	Total	25	100
Education in the last year	Yes	3	12
	No	22	88
	Total	25	100

Source: Results from the survey.

In some villages, they were completely concentrated in one place and created big problems in the village. In some places, different practices were applied depending on the people. The road layout was not established adequately. The roads were built without qualifications. There was discrimination among people. There was a store system in the region.

Registration and distribution of title deeds for consolidation took about two years, people who were following and preparing for planting had to fallow again because their parcels were relocated, producers who later became aware of the consolidation and relocated, 48 % of the producers in the villages where consolidation was carried out were satisfied with the consolidation against 52%. 50% of them stated that they did not have aggregation, and 52% of them stated that they recommended aggregation to other producers and other villages. 20% stated that they encountered a legal problem in aggregation and filed a lawsuit.

In fact, the rate of producers experiencing legal problems is quite high, however, due to reasons such as lack of legal knowledge in filing a lawsuit, not being aware of it at the time, and being in different settlements.

The rate of those who had legal problems and filed a lawsuit remained low.

When we evaluated the producers' perspective on land consolidation according to approximately 25 criteria, how many criteria are there, 24% of the producers declared that the number of Persians did not decrease at all, and 10% of them stated that it did not decrease.

This rate is 40% in total. That is, in a region where consolidation is taking place.

It is significant that the producers make such an evaluation in consolidation, the main purpose of which is to reduce the number of parcels.

The producers' perspective on consolidation is scored from one to five, according to different variables, one strongly disagrees, two disagree, three a medium, four agree, and five strongly agree.

Table 3. General Evaluation and Satisfaction

Variable	Yes (%)	No (%)	Total (%)
Satisfaction with Consolidation	48	52	100
Recommend consolidation	52	48	100
Legal Problem	20	80	100
Perspective on the Project Positive	80	20	100

Source: Results from the survey.

If we interpret the criterion that there is a decrease in the input costs, 64% of the producers stated that there is absolutely no decrease in the input costs.

Similarly, the percentage of those who say that the ownership and shareholding problem is solved is answered as solved by 88%.

When we look at the rates given to these variables below four and five points and the rates below the average, we see that these rates are quite low illustrated in Table 4.

Table 5 offers an insight into respondents' attitudes and experiences concerning various aspects of land consolidation.

It indicates that 52% of respondents strongly agree (rated as 5) that land consolidation facilitates mechanization and enhances its efficiency, with 8% somewhat agreeing and 8% strongly disagreeing. Regarding input costs post-consolidation, 60% of respondents strongly agree they decreased, while 16% somewhat agree.

Additionally, 88% strongly agree that ownership and shareholding issues were resolved through land consolidation, along with 4% somewhat agreeing.

Furthermore, 79.2% strongly agree that land consolidation enhances soil fertility, with 12.5% somewhat agreeing.

In terms of agricultural work, 64% strongly agree that land consolidation reduces associated difficulties, while 16% somewhat agree.

Moreover, 56% strongly agree that transportation costs decreased after consolidation, with 16% somewhat agreeing.

Table 4. Perspective on Land Consolidation

Opinions	1 point	2 points	3 points	4 points	5 points	Total
Parcel count decreased	24	16	8	32	20	100
My input costs decreased	64	4	16	20	0	100
Ownership and shareholding problems have been resolved	88	4	0	8	0	100
Soil fertility increased	79.2	8.3	0	12.5	0	100
Agricultural work has reduced vision difficulties	64	12	8	16	0	100
My transportation and transportation costs decreased	56	8	12	8	16	100
My access to main and secondary roads has become easier	36	12	28	4	20	100
I can use the lands I cannot use	62.5	16.7	0	12.5	0	100
Opportunity	59.1	9.1	4.5	4.5	22.7	100
Be aware of others cultivating my land	68	12	4	16	0	100
There was no decrease in the number of parcels	48	8	4	12	28	100
The shape of the parcels has been completely corrected	41.7	16.7	12.5	4.2	25	100
Everyone was treated equally	44	12	20	4	20	100
Getting information and defending your rights	40	8	8	44	0	100
There were no parcel changes	41.7	4.2	8.3	16.7	29.2	100
Your objections have been taken into consideration	40	8	8	12	32	100
Title deeds were delivered on time	34.8	0	26.1	17.4	21.7	100
Same plot left fallow	44	4	12	16	24	100
There was no inheritance fight	41.7	4.2	4.2	20.8	29.2	100
Processed treasury lands continue	64	4	4	4	24	100
Pasture lands were protected	33.3	4.2	8.3	29.2	25	100
The exchange was made fairly	37.5	4.2	20.8	20.8	16.7	100
The evaluation of the parcels was done correctly	33.3	4.2	29.2	12.5	20.8	100
No profit was made from buying and selling parcels	36	4	24	20	16	100
Total Satisfaction	48	0	24	0	28	100

Source: Results from the survey.

Accessibility to main and secondary roads also improved, with 36% strongly agreeing and 20% somewhat agreeing. Additionally, 62.5% strongly agree they can utilize lands previously unusable due to fragmentation, smallness, and shareholding issues, with 16.7% somewhat agreeing. Satisfaction with consolidation is mixed, with 48% expressing satisfaction and 52% dissatisfaction. Finally, regarding equal treatment, 44% of respondents strongly agree that everyone was treated equally, while 20% somewhat agree.

A linear regression model was applied, taking all other variables as dependent variables and all other variables as independent variables. The R^2 value obtained is 0.85.

The explanation rate of significant variables in the model for the variance in the dependent variable is 85%.

Since the tolerance value is less than 0.10 and the VIF value is less than 10, there is no multicollinearity problem illustrated in Table 6.

Table 5. An overview of respondents' attitudes and experiences regarding various aspects of land consolidation

Variables		Frequency	Percentage
Land consolidation facilitated the use of mechanization and increased the efficiency of mechanization.	1.00	13	52
	3.00	2	8
	4.00	2	8
	5.00	8	32
	Total	25	100
After land consolidation, my input costs decreased.	1.00	15	60
	3.00	1	4
	4.00	4	16
	5.00	5	20
	Total	25	100
My ownership and shareholding problems were solved with land consolidation.	1.00	22	88
	3.00	1	4
	5.00	2	8
	Total	25	100
Land consolidation increased soil fertility.	1.00	19	79
	2.00	2	8
	5.00	3	12
	Total	24	100
Land consolidation reduced the difficulties I had in performing agricultural work.	1.00	16	64
	2.00	3	12
	3.00	2	8
	5.00	4	16
	Total	25	100
After land consolidation, my transportation and transportation costs decreased.	1.00	14	56
	2.00	2	8
	3.00	3	12
	4.00	2	8
	5.00	4	16
	Total	25	100
After land consolidation, my access to main and secondary roads became easier.	1.00	9	36
	2.00	3	12
	3.00	7	28
	4.00	1	4
	5.00	5	20
	Total	25	100
I can also use my lands, which I could not use before the land consolidation due to fragmentation, smallness, and shareholding, after the consolidation.	1.00	15	63
	2.00	4	17
	4.00	2	8
	5.00	3	12.5
	Total	24	100
My objections and requests to the hangers were taken into consideration sufficiently.	1.00	10	40
	2.00	2	8
	3.00	2	8
	4.00	3	12
	5.00	8	32
	Total	25	100
Legal Issue	Yes	5	20
	No	20	80
	Total	25	100
Perspective on the Project	Positive	20	80
	Negative	5	20
	Total	25	100
Satisfied with the consolidation	Yes	12	48
	No	13	52
	Total	25	100
Everyone was treated equally; the notables of the neighborhood were not given any privileges.	1.00	11	44
	2.00	3	12
	3.00	5	20
	4.00	1	4
	5.00	5	20
	Total	25	100

Source: Results from the survey

Table 6. Linear regression model

					Multi Connection	
Variable	**Coefficient**	**Standard error**	**t statistic**	**p value**	**Tolerance**	**VIF**
Fixed Term	1.653	1.012	1.634	0.126	-	-
Land consolidation facilitated the use of mechanization and increased the efficiency of mechanization	2.045	0.405	5.048	0.000	0.733	1.364
Would you recommend consolidation? 1=yes, 2=no)	-1.352	0.392	-3.447	0.004	0.733	1.364

Source: Authors' results.

The above table shows that two variables remained significant in the model. Due to the positive coefficient, it is seen that those who find the statement "land consolidation facilitated the use of mechanization and increased the efficiency of mechanization" positively are satisfied with the consolidation carried out in their neighborhoods. With the negative coefficient, it is understood that those who do not recommend consolidation are not satisfied with the consolidation carried out in their neighborhoods. This finding is supported by the results of [8].

Table 7 below illustrates that the R^2 value obtained is 0.697.

The explanation rate of significant variables in the model for the variance in the dependent variable is 69.7%. Since the tolerance value is less than 0.10 and the VIF value is less than 10, there is no multicollinearity problem.

Table 7 highlights the persistence of three significant variables within the model.

The positive coefficient suggests that as land availability increases, so does the pre-consolidation land presence.

Conversely, the negative coefficient implies that participants in agricultural training possess more land assets. Furthermore, non-recommendation of consolidation correlates with dissatisfaction regarding neighborhood consolidation efforts. Additionally, absence from any cooperative is associated with higher land assets.

Table 7. A linear regression model was applied, taking land assets as the dependent variable and all other variables as independent variables

					Multi Connection	
Variables	**Coefficient**	**Standard error**	**t statistic**	**p value**	**Tolerance**	**VIF**
Fixed Term	5.72	256.01	0.02	0.982		
Number of parcels before consolidation	79.13	12.41	-3.45	0.004	0.73	1.36
Attended any agricultural training program (course, meeting, demonstration, etc.) in the last year (1=yes; 2=no)	-289.92	107.82	-2.69	0.014	0.93	1.07
A member of any cooperative? (1=yes;2=no)	184.08	80.91	2.28	0.034	0.87	1.15

Source: Authors' results.

There was no increase in parcels for any producer after consolidation. There are producers whose parcel numbers remain the same or decrease. The R^2 value obtained is 0.851.

The explanation rate of significant variables in the model for the variance in the dependent variable is 85.1%. Since the tolerance value is less than 0.10 and the VIF value is less than 10, there is no multicollinearity problem illustrated in Table 8.

Table 8 indicates that the variables remained significant in the model. Due to the positive coefficient, it is seen that as education, experience, and the number of tractors increases, the number of parcels of the

producer decreases more at the end of consolidation. It is seen that as the land availability increases, the land existence before consolidation also increases.

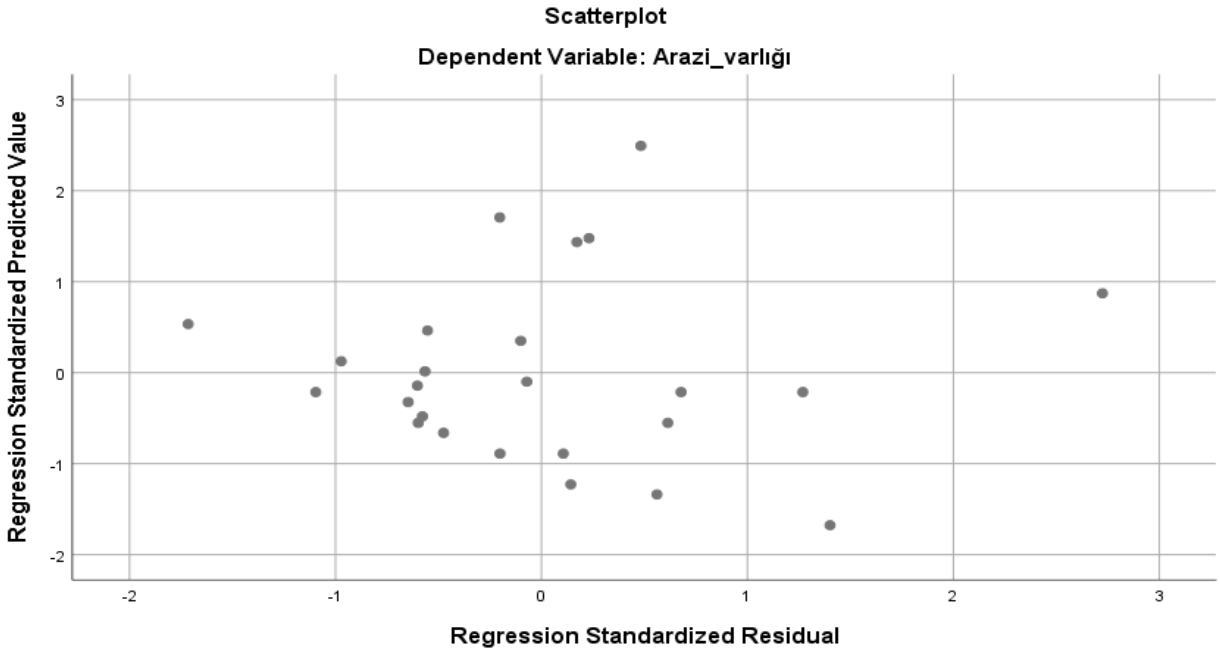


Fig. 1. Regression standardized Residual
Source: Authors' results.

Table 8. A linear regression model was applied by taking the parcel reduction amount as the dependent variable and all other variables as independent variables

					Multi Connection	
Variable	**Coefficient**	**Standard error**	**t statistic**	**p value**	**Tolerance**	**VIF**
Fixed Term	-0.26	3.30	-0.08	0.938		
Education (primary school, middle-high school, language arts and above)	3.18	0.46	6.95	0.000	0.75	1.34
Experience (years)	0.15	0.03	5.87	0.000	0.56	1.80
Number of tractors (units)	2.99	0.49	6.13	0.000	0.63	1.59
A member of any cooperative? (1=yes; 2=no)	-3.61	0.58	-6.22	0.000	0.87	1.15
Satisfied with the land consolidation? (1=yes;2=no)	-3.63	1.14	-3.18	0.005	0.18	5.52
Rate the land consolidation carried out in your neighborhood: 1-Very bad, 5-Very good?	-0.87	0.36	-2.46	0.025	0.18	5.57

Source: Authors' results.

With its negative coefficient, it is understood that the number of parcels of those who are not members of a cooperative decreases compared to those who are, because of consolidation. It is seen that the number of parcels of producers who are not satisfied with the land consolidation decreased compared to those who are satisfied after the consolidation, and similarly, those who are dissatisfied with the consolidation carried out in their neighborhoods do not have a decrease in the number of parcels compared to those who are satisfied. In this case, satisfaction after consolidation is closely related to the decrease in the number of parcels. This finding is consistent with the results reported by [5].

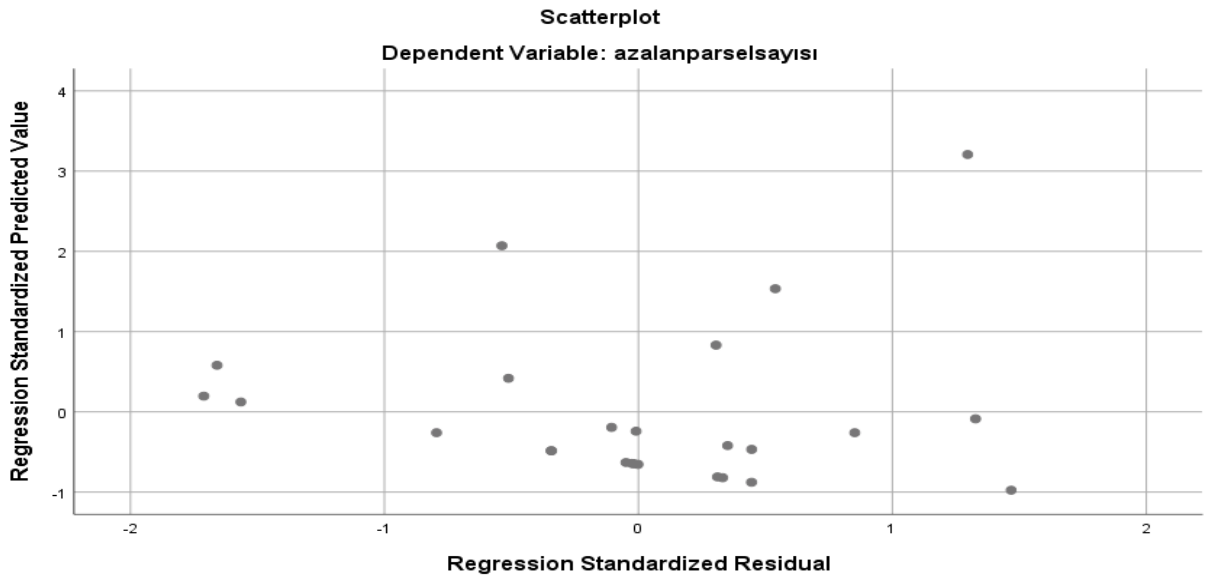


Fig. 2. Scatterplot
Source: Authors' results.

CONCLUSIONS

The study highlights the importance of consolidating fragmented land holdings to create more cohesive and economically viable agricultural units. Despite challenges such as legal complexities and concerns over property rights, land consolidation emerges as a crucial tool for improving agricultural efficiency and productivity.

The research shows the importance of factors such as education level, agricultural experience, and participation in cooperative programs in influencing the success and satisfaction of farmers with the consolidation process. Notably, farmers with higher levels of education and agricultural experience tend to experience greater benefits from land consolidation, indicating the importance of knowledge and expertise in optimizing the outcomes of consolidation efforts.

Moreover, the study emphasizes the role of farmer satisfaction as a key determinant of the effectiveness of land consolidation initiatives. Satisfaction levels are closely linked to the success of land management practices and cooperative participation, highlighting the need for inclusive and participatory approaches in consolidation projects.

Overall, the findings of the study provide valuable insights for policymakers and practitioners in the development of agricultural policies and rural development strategies. With the challenges and leveraging the opportunities associated with land consolidation, policymakers can promote sustainable agricultural development and enhance the livelihoods of farmers in rural areas. Additionally, the study underscores the importance of continued research and monitoring to evaluate the long-term impacts of consolidation efforts and inform future policy decisions.

The research contributes to a better understanding of the effects of land consolidation on agricultural enterprises in the Cihanbeyli district and provides valuable recommendations for enhancing the effectiveness and sustainability of consolidation processes in Turkey's agricultural sector.

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