



## Member Satisfaction with the Organic Hazelnut Agricultural Producer Union in the Samsun Province, Turkey

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### ABSTRACT

The objective of this study was to examine the level of member satisfaction and its influencing factors in the Organic Hazelnut Agricultural Producer Union (OHAPU) of the Samsun Province. The data of this study was collected through surveys from 92 members in the Samsun Province using the Simple Random Sampling Method. The factors affecting the levels of the members' satisfaction were analyzed by the Ordered Probit Model. The research results showed that while 52% of the members were highly satisfied with the union, 30% and 18% of the members were satisfied at moderate and low levels, respectively. The empirical model results showed also that while the variables of the education level of the member, marketing hazelnut through the unions, participation in education, the member's commitment to the union and the trust level of the member in other members had statistically positive effects on the satisfaction level of the members towards the union, the variables of gender and frequency of visits to the union had statistically negative effects. Therefore, the union's taking a more active role in marketing of the hazelnut of the members, increasing the participation of the members to training programs, encouraging more women to become a member of the union, increasing the members' trust in and commitment to their unions could increase the members' satisfaction to their union.

### Research Article

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## Samsun İli Organik Fındık Tarımsal Üretici Birliklerinde Üye Memnuniyeti

### ÖZET

Araştırmanın amacı Samsun İli Organik Fındık Tarımsal Üretici Birlikleri (OFTB)'nde üye memnuniyetini ve etkili faktörleri belirlemektir. Araştırmanın verileri Samsun ilinde Basit Tesadüfi Örneklem Yöntemine göre belirlenen 92 üyeden anket yoluyla elde edilen verilerden oluşmaktadır. Üyelerin memnuniyetine etkili faktörler ise Sıralı Probit Modeli kullanılarak analiz edilmiştir. Araştırma sonuçları üyelerin %52'sinin birlikten çok memnun olduğunu, %30'unun orta ve %18'inin ise düşük seviyede memnun olduğunu göstermektedir. Model sonuçları üye memnuniyetine üyenin eğitim seviyesi, birlik aracılığıyla fındığı pazarlama, eğitimlere katılma, üyenin birliğe bağlılığı ve üyenin diğer üyelere güven düzeyi değişkenlerinin pozitif yönlü, cinsiyet ve birliği ziyaret etme değişkenlerinin ise negatif yönlü etkilediğini göstermektedir. Bu nedenle, üyelerin memnuniyetini artırabilmek için birliklerin fındığın pazarlanmasında daha fazla aktif rol alması, üyelerin eğitim programlarına katılımlarının artırılması, daha fazla kadının birliğe üyeliklerinin teşvik edilmesi, üyelerin birliklerine güven ve bağlılıklarının artırılması gerekli görlmektedir.

### Araştırma Makalesi

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## INTRODUCTION

The Strategic Plan of the Ministry of Agriculture and Forestry (MoAF) for the period of 2013-2017 emphasized that providing effective cooperation in the agricultural sector would increase farmers' life standards in the rural area and contribute to rural development goals in Turkey. It has also been reported that the establishment of producer organizations should be supported in order to strengthen and develop the roles of producer organizations in agricultural markets (Anonymous, 2017a). In 2018, 864 thousand tons of hazelnut was produced in 966 thousand hectares of land in the world. Turkey had 75.3% of the world hazelnut plantations and accounted for 59.6% of the world hazelnut production, and 64.5% of world hazelnut exports (Anonymous, 2020a). In 2018 Turkey produced, 515 thousand tons of hazelnut by 502 thousand farms in 36 Provinces (Turkish Statistical Institute (Anonymous, 2020b). However, about 4 million people were directly or indirectly employed in hazelnut production (Anonymous, 2014). In the Samsun Province, 66 thousand tons of hazelnut were produced in 1.145.240 hectares area. The share of the Samsun Province in the hazelnut production of the country was 12.8% (Anonymous, 2020b). The most important hazelnut producer districts of the Samsun Province are Çarşamba (39.6%), Terme (19.8%), Salıpazarı (14.7%), Ayvacık (7.5%), Tekkeköy (5.1%) and 19 Mayıs (4.5%), respectively (Anonymous, 2018). Organizing hazelnut producers in Turkey is an important necessity in order to solve their problems, contribute to hazelnut policies, affect the hazelnut market balance, reduce production costs and get convenient prices. Hazelnut producers in the Samsun Province have organized under the Hazelnut Agricultural Sales Cooperatives (HASC) and Hazelnut Agricultural Producer Union (HAPU). While HASCs were only established in the districts of Çarşamba and Terme, HAPUs were established in the districts of Çarşamba, Terme and 19 Mayıs (Anonymous, 2017b). According to the law no 5200, HAPUs can be voluntarily established at the district level in minimum on the basis of product or product group (Anonymous, 2004).

The sustainability of farmer organizations depends generally on their members' satisfaction and commitment to their organizations. Satisfaction expresses whether a person feels that a need or a desire is fulfilled, in this case the members' demands from the cooperative (Nilsson et al., 2009). The more members are satisfied the more they adhere to their organization. This can contribute to the sustainability of the farmer organization. Therefore, it is very important to determine the satisfaction of the members with their organizations. Literature review

showed that there had been a limited number of researches on the member's satisfaction with their agricultural organizations. There had been many studies investigating the effect of member satisfaction on the trust in cooperatives (Hansen et al., 2002; Österberg and Nilsson, 2009; Nilsson et al., 2009; Sultan and Kataria, 2012; George et al., 2013; Prasertsang et al., 2020), underlining that the increase in the members' satisfaction with their organizations could also increase the members' trust in their organization, eventually increasing the performance of the organizations. Österberg and Nilsson (2009) emphasized that there is a need for research on member satisfaction.

The aim of this study was to examine the level of member satisfaction and its influencing factors in the organic hazelnut agricultural producer union of the Samsun Province.

## MATERIALS and METHODS

The research population composed of 1.970 hazelnut producers who were members of 3 Organic Hazelnut Agricultural Producer Unions in the Samsun Province of Turkey. The sample number was calculated using the Formula 1 of the Simple Random Sampling Method (Yamane, 1967). In the formula, hazelnut land of the farms was used as the sampling criteria.

$$n = \frac{N(zC)^2}{Nd^2 + (zC)^2} \quad (1)$$

In the formula, N was the number of farms in the population, z was the value of the standard normal distribution (1.645), C was the variation coefficient, d was the error margin based on the study ( $\pm 10\%$ ) and n was the number of samples required. The error margin and confidence interval for the study were accepted as 10% and 95%, respectively. The sample size was calculated as 92 members of the unions.

The main data of this study was collected through questionnaires conducted with 92 union members of 3 OHAPUs in Samsun Province during the period of April-July 2014. Of the sample members, 66% were members of the Çarşamba Organic Hazelnut APU, 19% 19 Mayıs Organic Hazelnut APU and 15% Terme Organic Hazelnut APU. In this study, the value of Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) was 0.903, and this indicates that the sampling size was sufficient. SPSS 17.0 and NLOGIT 5 programs were used to analyze the data of the study. The reliability of the survey was tested using the reliability analysis. The Cronbach's alpha coefficient was used to measure the consistency among the answers of the respondents. The Cronbach's alpha coefficient was calculated as 0.945, indicating that the

study was highly reliable.

Secondary data of the study were obtained from institutions such as the Ministry of Agriculture and Forestry (MoAF), Turkish Statistical Institute (TURKSTAT), Samsun Directorate of Provincial Agriculture and Forestry (SDAF) and Official Gazette of the Republic of Turkey (OGRT). Nevertheless, in the research, articles, thesis and reports etc. were used as material.

The factors influencing the levels of the members' satisfaction were analyzed using the ordered probit model. Definitions of the variables used in the model were presented in Table 1. The Variance Inflation Factor (VIF) values for the independent variables of the model were lower than 20, which indicates that there was no multi correlation among the variables.

In this study, 5 Likert rating scale questions (1: Strongly disagree to 5: Strongly agree) were used to learn the satisfaction of the member (Table 2). The

members' satisfaction index was determined using the codes of answers with sixteen questions. The member satisfaction indexes were categorized in three groups according to their average score. The members who scored less than 2.5 were classified as the low satisfaction group, the members who scored from 2.5 to 3.5 were classified as the moderate satisfaction group, and the members who scored more than 3.5 were classified as the high satisfaction group. ANOVA and Kruskal Wallis tests were used to compare parametric and non-parametric variables, respectively to determine whether there was any difference among the groups.

The ordered model, for which the dependent variable was coded 0 as low, 1 as moderate, and 2 as high each for satisfaction, is expressed as

$$y_i^* = \beta'x_i + \varepsilon_i, \varepsilon_i \sim F(\varepsilon_i | \theta), E(\varepsilon_i | x_i) = 0, \text{ and } Var(\varepsilon_i | x_i) = 1 \quad (2)$$

Table 1. Descriptive statistics of the independent variables of the models

*Çizelge 1. Modelin bağımsız değişkenlerinin tanımlayıcı istatistikleri*

Variables ( <i>Değişkenler</i> )	Definition of the variables ( <i>Değişkenlerin tanımları</i> )	VIF ( <i>VEF</i> )	Expected Effect ( <i>Beklenen etki</i> )
Union variables ( <i>Birlik değişkenleri</i> )	PERFORMC	Performance index of the union (%)	1.812 (+)
	GENASSEM	= 1 if respondent joins general assembly; 0 otherwise	2.13 (+)
	SUPPINP	= 1 if respondent is supplied inputs by the union; 0 otherwise	1.32 (+)
	MARKETNG	= 1 if respondent markets product through the union; 0 otherwise	4.54 (+)
	MANAGEXP	= 1 if respondent has an experience in the management of the union; 0 otherwise	1.42 (+)
	PARTRAIN	= 1 if respondent participates in a training at the union; 0 otherwise	2.08 (+)
	EXPORT	= 1 if the union exports hazelnut; 0 otherwise	4.26 (+)
	CAPITAL	= 1 if respondent pays membership fee to the union; 0 otherwise	1.74 (+)
	DISTANC	Distance between the farm and the union (km)	2.41 (-)
	VISITFRE	Frequency of visit to the union (times/year)	1.66 (+)
	COMMITM	Commitment index to the union	8.04 (+)
	TRUSTUNI	Trust index in the union	8.78 (+)
	TRUSTEB	Trust index in the union executive board	5.71 (+)
TRUSTOTM	Trust index in other union members	1.82 (+)	
Farm variables ( <i>İşletme değişkenleri</i> )	HSIZE	Household size (person)	1.78 (+)
	NMEMBOR	Number of memberships of other agricultural organizations	2.00 (-)
	INSURANC	= 1 if respondent insures hazelnut; 0 otherwise	1.82 (+)
	INCOME	Total income of the member (\$/year)	1.69 (+)
	AGRLAND	Property land (da)	1.71 (+)
	NCATTLE	Number of NCATTLE unit	1.68 (+)
Members variables ( <i>Üye değişkenleri</i> )	MARSTAT	= 1 if respondent is married; 0 otherwise	1.31 (-)
	SOCSECUR	= 1 if respondent has social security; 0 otherwise	1.37 (+)
	MAINPROF	= 1 if the main profession is farming; 0 otherwise	1.77 (+)
	EDUCAT	Education level of the member (year)	2.64 (+)
	EXPERIEN	Agricultural experience of the member (year)	3.18 (-)
	GENDER	= 1 if respondent is male; 0 female	1.83 (+)
AGE	Age of the member (year)	3.83 (-)	

Table 2. Members' satisfaction with the OHAPU  
*Çizelge 2. OFTÜB üyelerin memnuniyeti*

Satisfaction to the union ( <i>Birlikten memnuniyet</i> )	Low Satisfaction ( <i>Düşük Memnuniyet</i> )	Moderate Satisfaction ( <i>Orta Memnuniyet</i> )	High Satisfaction ( <i>Yüksek Memnuniyet</i> )	General ( <i>Genel</i> )
1. Both the union and I benefitted from relationships.***	3.57	3.59	3.62	3.60
2. Most people and I were satisfied from their interaction with the union.***	3.59	3.62	3.65	3.65
3. I was generally satisfied with the relationships among the members of the union.***	3.56	3.58	3.62	3.60
4. Most members like to be interested in their union.***	3.53	3.58	3.58	3.59
5. The union failed to meet their members' needs.***	3.74	3.75	3.80	3.78
6. I think that the members were important for the unions.**	3.94	3.93	3.96	3.96
7. I believed that no value was created between the members and the union.***	3.87	3.93	3.93	3.93
8. My revenue was increased by being a member of the union.***	2.59	2.67	2.69	2.68
9. My farm costs decreased thanks to being a member of the union.***	2.52	2.59	2.52	2.53
10. I agreed that I could negotiate all things with the union.***	3.63	3.65	3.66	3.65
11. There was a continuous improvement in the services given by the union.***	3.66	3.69	3.70	3.70
12. My membership to the union increased my farm profit.***	2.66	2.72	2.76	2.75
13. I was generally satisfied to be a member of the union.***	3.49	3.52	3.54	3.53
14. The union fully met my expectations.***	2.59	2.61	2.66	2.64
15. The union met all things whatever I hope.***	2.60	2.62	2.67	2.65
16. The different political views negatively affected the groups in the union.***	3.72	3.74	3.75	3.76
Mean ( <i>Ortalama</i> )	3.33	3.36	3.38	3.37

Notes. \*\* significance level 0.05; \*\*\* significance level 0.01.

where  $y^*$  is the unobserved "latent" dependent variable,  $\beta$  is a vector of coefficients to be estimated,  $x$  is a vector of explanatory variables,  $\varepsilon$  a vector of error terms and F stands for any distribution that a researcher might consider.

$$\begin{aligned} \text{Prob}[y_i = 0] &= \Phi(-\beta'x_i) \\ \text{Prob}[y_i = 1] &= \Phi(\mu_1 - \beta'x_i) - \Phi(-\beta'x_i) \\ \text{Prob}[y_i = 2] &= \Phi(\mu_2 - \beta'x_i) - \Phi(\mu_1 - \beta'x_i) \end{aligned} \quad (3)$$

where  $\Phi$  is the normal cumulative density function,  $\mu_j$  and  $\mu_{j+1}$  represent the upper and lower threshold values for category  $j$ , respectively. Note that  $\mu_{-1} = -\infty$  and  $\mu_0 = 0$ .

The log likelihood function is:

$$\begin{aligned} \log L &= \sum_{i=1}^N \sum_{j=0}^2 y_{ij} \log(\Phi(\mu_j - \beta'x_i) - \Phi(\mu_{j-1} - \beta'x_i)) \\ &= \sum_{y_i=0} \log(\Phi(-\beta'x_i)) + \sum_{y_i=1} \log(\Phi(\mu_1 - \beta'x_i) - \Phi(-\beta'x_i)) + \\ &\quad \sum_{y_i=2} \log(\Phi(\mu_2 - \beta'x_i) - \Phi(\mu_1 - \beta'x_i)) \end{aligned} \quad (4)$$

Marginal effects were calculated to determine a unitary effect of each exogenous variable on each of the three categories of the dependent variable. The marginal effect of a continuous variable for the ordered probit model for three categories can be calculated as (Liao, 1994; Chen et al., 2002)

$$\begin{aligned} \frac{\partial \text{Prob}(y_i = 0)}{\partial x_i} &= -\phi(\hat{\beta}'x_i)\hat{\beta}_i, \\ \frac{\partial \text{Prob}(y_i = 1)}{\partial x_i} &= [\phi(-\hat{\beta}'x_i) - \phi(\hat{\mu}_1 - \hat{\beta}'x_i)]\hat{\beta}_i, \\ \frac{\partial \text{Prob}(y_i = 2)}{\partial x_i} &= [\phi(\hat{\mu}_2 - \hat{\beta}'x_i)]\hat{\beta}_i \end{aligned} \quad (5)$$

Where  $\phi$  is the normal probability density function. Marginal effects for a dummy variable, on the other hand, can be calculated as the difference between  $\Phi$  of the corresponding probability with and without the presence of the variable in question. For example,

$$\frac{\partial \text{Prob}(y_i = 0)}{\partial x_{1i}} = \Phi(-\hat{\beta}'x_i|_{x_{1i}=1}) - \Phi(-\hat{\beta}'x_i|_{x_{1i}=0}) \quad (6)$$

The standard errors of these marginal effects can be obtained by utilizing the delta method.

## RESULTS and DISCUSSION

Sixteen questions were used in determining the satisfaction of the members (Table 2). There were statistically significant differences among the satisfaction groups for each one of the 16 questions ( $p < 0.05$ ). Statistically significant differences were found among the satisfaction groups ( $p < 0.05$ ). The members were the most satisfied with "I think that the members were important for the unions (3.96)", but they were the least satisfied with "My farm costs

*decreased thanks to being a member of the union (2.53)".*

The research results showed that 52% of the members had high satisfaction with the union, 30% and 18% had moderate and low satisfaction levels, respectively. Newbery et al. (2013), in United Kingdom, found that 57.8% of the union members were very satisfied or satisfied, 26.5% of members were neither satisfied nor dissatisfied and 11.4 of the members had very dissatisfied or dissatisfied. However, Österberg and Nilsson (2009), in Sweden, found that while 12% of the members had high satisfaction levels with their agricultural cooperatives, 33.6% of the members had low satisfaction levels and 53.5% of the members were dissatisfied.

Ninety-eight percent of the members were male, and the average age of the members was 57. The average educational level of the members was primary school. Ninety percent of the members were farmers and they had an average farming experience of 33 years. There were statistically significant differences among the groups in terms of the main profession ( $p<0.10$ ). The farms had an average of 28 decare land, and their annual average total income was \$ 13 thousand. As the satisfaction of the members increased, their incomes also increased. Fulton and Giannakas (2001) also emphasized that the member satisfaction increased profitability in agricultural organizations. However, Österberg and Nilsson (2009) stated that an increase in income of farms led to an increase in the commitment to and satisfaction in the cooperatives.

The farmers were members of two farmers' organizations, and 94% of the members paid membership fees to their unions. While none of the members, who had low and moderate satisfaction, were supplied input by their union, only 2% of the members who had high satisfaction were supplied input by their union. However, the rate of those who sell their hazelnuts through the unions was 54%. This rate was 71% for the members with high satisfaction. There were statistically significant differences among the groups in terms of marketing hazelnuts through the union ( $p<0.01$ ). Kilic Topuz and Bozoğlu (2015) found that 53% of the members of agricultural development cooperatives were supplied agricultural inputs by their cooperatives. The participation rate of the members in the general assembly of the union was 71%, and as that participation rate increased, so did the satisfaction of the members with the union. There were statistically significant differences among the groups in terms of participation in the general assembly ( $p<0.01$ ). The participation rate of the members in the training programs of the union was 42%, and as this rate increased, the satisfaction of the members with the union increased as well. There were statistically significant differences among the groups in terms of participation in the training program of the union ( $p<0.01$ ). Liang et al. (2015) found that the

participation rate of the members in the training program and general assembly of the agricultural cooperatives in China were 87% and 74%, respectively. In this research, the average distance between the farm and the union was 12 km, and the members visited their union more than once a week. As the satisfaction level of the members with the union increased, their commitment to the union increased as well. There were statistically significant differences among the groups in terms of the commitment of the members ( $p<0.01$ ). There was a positive and statistically significant relationship among the groups in terms of the trust level of the members in the union, the union executive board and other union members ( $p<0.01$ ). As the satisfaction of the members increased, their trust in OHAPU, the union executive board and other members increased (Table 3). Hansen et al. (2002) stressed that as the member satisfaction increased, the member trust in their organization and organization performance increased. Prasertsang et al. (2020) emphasized that trust influenced the members level of satisfaction.

The Ordered Probit Model results showed that (Table 4) while the variables of the education level of the member, marketing hazelnut through the unions, participation in training programs of the union, commitment to the union and trust level in other members had statistically significant positive effects on the satisfaction level of the members towards the union. However, the variables of gender and visiting frequency to the union had statistically significant negative effects. Österberg and Nilsson (2009) found that the members' satisfaction with the agricultural cooperatives was affected by the variables of profitability, age, experience, commitment and trust towards the directors.

Members who participated in training programs of the union, marketed hazelnut through the union and had higher education levels were more satisfied. In addition, as the commitment to the union and trust level in other members increased, the satisfaction level of the members also increased. There is a statistically significant negative relationship between the gender and satisfaction of the members. The satisfaction level of female members was considerably higher than the male members.

Österberg and Nilsson (2009) conducted a research with Swedish agricultural cooperatives and found that the members who were satisfied with the profitability of the cooperatives had the highest degree of commitment, but they had the lowest confidence in cooperative management. Nevertheless, Nilsson et al (2009), in Swedish agricultural cooperatives, found that there was a positive relationship between satisfaction and the trust in the executive board, and the members who had low satisfaction with the cooperative had also low trust in the executive board. The research findings showed that there was a

statistically significant positive relationship between the satisfaction level of the members and the member's commitment to the union and the trust level of the member in other members. Some studies revealed also that increases in member satisfaction

with the organization increased the trust in the organization and organizational performances (Hansen et al., 2002; Österberg and Nilsson, 2009; Sultan and Kataria, 2012; George et al., 2013; Kilic Topuz and Bozoğlu, 2015).

Table 3. Descriptive statistics of the variables used in the satisfaction models

*Çizelge 3. Memnuniyet modelinde kullanılan değişkenlerin tanımlayıcı istatistikleri*

Variables ( <i>Değişkenler</i> )	Low Satisfaction ( <i>Düşük Memnuniyet</i> ) (N=17)		Moderate Satisfaction ( <i>Orta Memnuniyet</i> ) (N=27)		High Satisfaction ( <i>Yüksek Memnuniyet</i> ) (N=48)		General ( <i>Genel</i> ) (N=92)		
	Mean ( <i>Ort.</i> )	Std. Dev. ( <i>Std. Sp</i> )	Mean ( <i>Ort.</i> )	Std. Dev. ( <i>Std. Sp</i> )	Mean ( <i>Ort.</i> )	Std. Dev. ( <i>Std. Sp</i> )	Mean ( <i>Ort.</i> )	Std. Dev. ( <i>Std. Sp</i> )	
Union variables ( <i>Birlik değişkenleri</i> )	PERFORMC	48.42	7.38	49.93	8.80	50.45	9.12	49.92	8.67
	GENASSEM ***	0.41	0.51	0.67	0.48	0.85	0.36	0.71	0.45
	SUPPINP	0.00	0.00	0.00	0.00	0.02	0.14	0.010	0.10
	MARKETNG***	0.47	0.51	0.30	0.47	0.71	0.46	0.54	0.50
	MANAGEXP***	0.00	0.00	0.15	0.36	0.13	0.33	0.10	0.31
	PARTRAIN***	0.12	0.33	0.33	0.48	0.58	0.50	0.42	0.49
	EXPORT**	0.59	0.51	0.44	0.51	0.73	0.45	0.61	0.48
	CAPITAL	0.94	0.24	0.96	0.19	0.94	0.24	0.94	0.22
	DISTANC*	14.12	11.55	11.70	8.39	11.33	8.17	11.95	8.89
	VISITFRE**	25.88	87.54	55.81	112.79	107.04	136.55	77.00	125.3
	COMMITM***	2.22	0.59	3.43	0.75	4.46	0.36	3.74	1.01
	TRUSTUNI***	2.18	0.75	3.26	0.76	4.33	0.47	3.61	1.03
	TRUSTEB***	1.92	0.52	3.32	0.91	4.17	0.59	3.50	1.08
	TRUSTOTM***	2.99	0.96	3.60	0.61	4.27	0.56	3.83	0.82
Farm variables ( <i>İşletme değişkenleri</i> )	HSIZE	3.00	1.41	3.74	1.93	4.02	1.98	3.75	1.89
	NMEMBOR	1.94	0.56	2.11	0.70	2.19	0.73	2.11	0.69
	INSURANC*	0.24	0.44	0.11	0.32	0.19	0.39	0.17	0.38
	INCOME	9,788	7,974	12,608	8,616	14,725	12,608	13,222	10,889
	AGRLAND	26.00	37.72	32.33	31.72	27.88	29.43	28.83	31.47
NCATTLE	2.52	5.91	3.56	7.49	5.26	13.43	4.25	10.79	
Members variables ( <i>Üye değişkenleri</i> )	MARSTAT***	1.00	0.00	0.85	0.36	0.94	0.24	0.92	0.26
	SOCSECUR*	1.00	0.00	0.96	0.19	0.94	0.24	0.95	0.20
	MAINPROF*	0.82	0.39	0.93	0.27	0.92	0.28	0.90	0.29
	EDUCAT	4.82	2.32	6.15	2.73	6.04	2.98	5.84	2.81
	EXPERIEN	37.18	14.62	32.52	16.87	31.94	13.89	33.07	14.91
	GENDER	1.00	0.00	1.00	0.00	0.98	0.14	0.98	0.10
	AGE	58.88	12.96	57.33	14.79	56.60	12.23	57.23	13.03

Notes. \* Significance level 0.1; \*\* significance level 0.05; \*\*\* significance level 0.01.

The results of marginal effects showed that the likelihood of being included in a higher satisfaction category was 77% more for the members who were provided input by the union and 60% more for the members who marketed hazelnut via the union. Hence, it is obvious that economic factors had greater influence than social ones in increasing members' satisfaction. This research finding was also supported by Sultan and Kataria (2012)'s study conducted in the Chinese agricultural cooperatives. The members who participated in the training programs of the union were 90% more likely to be included in the high satisfaction category than the rest. Female members were 81% more likely to enter the high satisfaction category than male ones.

## CONCLUSIONS

This research concluded that while about half of the members had high satisfaction, the remaining had moderate or low satisfaction with their union. However, it was also concluded that the variables such as the education level of the members, marketing hazelnut through the unions, participation in training programs, member commitment to the union and trust level to other members had statistically positive effects on the satisfaction level of the members towards the union. However, the variables of gender and visiting frequency to the union had statistically negative effects on the satisfaction level of the members.

Table 4. Ordered Probit Model estimates for the probability of members' satisfaction  
 Çizelge 4. Üyelerin memnuniyet olasılığı için Sıralı Probit Model tahminleri

Variables (Değişkenler)	Coefficients (Katsayılar)	Marginal Effects (Marjinal Etkiler)			
		Low Satisfaction (Düşük Memnuniyet) Y=0	Moderate satisfaction (Orta Memnuniyet) Y=1	High satisfaction (Yüksek Memnuniyet) Y=2	
Constant	-23.3605*	-	-	-	
Union variables (Birlik değişkenleri)	PERFORMC	-0.06336	0.93992D-06	0.01324	-0.01325
	GENASSEM	1.24677	-0.25853D-04	-0.21479	0.21482
	SUPPINP	5.21008	-0.15612D-04	-0.77369**	0.77371**
	MARKETNG	3.23059*	-0.82460D-04	-0.60954	0.60962
	MANAGEXP	0.88380	-0.95818D-05	-0.22969	0.22970
	PARTRAIN	5.45405***	-0.00015	-0.90312***	0.90327***
	EXPORT	-1.37581	0.18711D-04	0.31972	-0.31974
	CAPITAL	1.09028	-0.27612D-04	-0.15619	0.15621
	DISTANC	0.05025	-0.74536D-06	-0.01050	0.01050
	VISITFRE	-0.01511***	0.22419D-06	0.00316	-0.00316
	COMMITM	5.25992***	-0.78023D-04	-1.09943	1.09950
	TRUSTUNI	1.77364	-0.26309D-04	-0.37073	0.37075
	TRUSTEB	0.41525	-0.61596D-05	-0.08680	0.08680
TRUSTOTM	4.28015***	-0.63490D-04	-0.89463	0.89470	
Farm variables (İşletme değişkenleri)	HSIZE	0.36554	-0.54222D-05	-0.07640	0.07641
	NMEMBOR	-0.07385	0.10954D-05	0.01544	-0.01544
	INSURANC	-0.10225	0.15688D-05	0.02084	-0.02084
	INCOME	0.02512	-0.37262D-06	-0.00525	0.00525
	AGRLAND	-0.02293	0.34018D-06	0.00479	-0.00479
	NCATTLE	-0.03049	0.45235D-06	0.00637	-0.00637
Members variables (Üye değişkenleri)	MARSTAT	-2.00608	0.14955D-04	0.54967	-0.54969
	SOCSECUR	-1.70903	0.13085D-04	0.48132	-0.48133
	MAINPROF	2.14879	-0.91055D-04	-0.24114	0.24123
	EDUCAT	0.70372**	-0.10439D-04	-0.14709	0.14710
	EXPERIEN	-0.05352	0.79390D-06	0.01119	-0.01119
	GENDER	-18.3972**	0.18117D-04	0.81064***	-0.81065***
AGE	0.07481	-0.11097D-05	-0.01564	0.01564	
Log-Likelihood			-15.34161		
X <sup>2</sup>			155.38614		
McFadden R <sup>2</sup>			0.8350980		
Mu			11.6495***		
N			92		

Notes. \* Significance level 0.1; \*\* significance level 0.05; \*\*\* significance level 0.01.

Therefore, in order to increase the satisfaction of the members, the union's taking a more active role in marketing the hazelnut of the members, increasing the participation of the members to training programs, encouraging more women to become members of the union, increasing the members' trust in and commitment to their unions. Furthermore, the members should market their hazelnut through their union and female farmers should be encouraged to be members of the union. Vocational education of the members should also be increased. There was a strong positive relationship between the satisfaction level of members and both the commitment to the union and the member's trust in the union. Therefore, the members' commitment and trust levels in their unions should be established and increased, in order to attain overall satisfaction.

### Statement of Conflict of Interest

Authors have declared no conflict of interest.

### Author's Contributions

The contribution of the authors is equal.

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