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Research Paper

Relation of Vineyardists in Thrace with Publishers and Researchers

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Abstract

It is aimed to determine the viticulture-oriented relations of the farmer/viticulture enterprises growing grape in Thrace (Tekirdağ, Edirne, Kırklareli and Çanakkale provinces) with the extension organization and research institutions and their contribution to the local viticulture in this study. Field studies/surveys were carried out with the participation of the local viticulture farmers, public and private publishers, and University Lecturers and Research Institute research staff in the region researching viticulture.

According to the results of the study, in the Provincial/District Directorates of the Ministry of Agriculture and Forestry, the time that a publisher responsible for the extension activities related to viticulture can allocate to the publication activities related to viticulture is 49.2 minutes/day within a daily (8 hours) working time. Researcher-Farmer relations were weak, Publisher-Farmer relations were moderate, Researcher-Publisher relations were weak.

Introduction

Türkiye is located in a suitable climatic zone for viticulture and is considered as one of the homeland countries of the vine, with a viticulture culture of about 6000 years and a very rich genetic potential of both wild and cultivated vines (Çelik et al., 1998). According to the statistics of the United Nations Food and Agriculture Organization (FAO), Türkiye is the 5th largest vineyard country in the world in terms of vineyard area and the 6th largest in grape production (FAO, 2020).

According to the data of the Turkish Statistical Institute (TSI), the changes in the 10-year vineyard area and grape production amounts of the provinces in the study area between 2010-2019 are shown in Table 1. Türkiye's vineyard areas decreased by 15.1% and grape production by 3.6% during the period examined. In the provinces of the study area, the vineyard area has decreased by 20.7% and the grape production has decreased by 4.7%, higher than the overall rate of Türkiye (TUIK, 2020).

Decreases in vineyard areas are particularly striking in Türkiye and Thrace, and this may be caused by deficiencies and mistakes in the use of new varieties and new production technologies. At this point, grape growers must be adequately informed and guided about new grape varieties and growing techniques in viticulture so that they can make rational decisions in their production preferences. Undoubtedly, this situation can only be possible with the uninterrupted provision of strong communication and dynamic cooperation between the Researcher-Publisher-Farmer (EQF) working effectively.

As in all agricultural activities, it is expected that the production technologies developed through research studies, the advantages of the new varieties obtained, and all kinds of innovations are used by the farmers in viticulture. For this purpose, it is necessary to transfer the research studies conducted in the Research Institutions of the Ministry of Agriculture and Forestry and in the Faculties of Agriculture of the

Table 1. Important provinces in Türkiye viticulture and change in vineyard areas in the last ten years

Region	Vineyard area (da)			Grape production (ton)		
	2019	2010	Change (%)	2019	2010	Change (%)
Çanakkale	46.168	49.543	-6.8	43.628	39.744	9.8
Edirne	5017	20.196	-75.2	6.573	13.227	-50.3
Kırklareli	4.532	6.321	-28.3	4.425	5.020	-11.9
Tekirdağ	37.971	42.018	-9.6	39.558	40.851	-3.2
Total	93.688	118.078	-20.7	94.184	98.842	-4.7
Türkiye	4.054.387	4.777.856	-15.1	4.100.000	4.255.000	-3.6

(TUIK, 2020)

universities, which are engaged in research activities, to the farmers and adopt the appropriate ones.

Material and Methods

Material

The material of the study consisted of primary data obtained from the farmers engaged in viticulture in Tekirdağ, Edirne, Kırklareli and Çanakkale provinces, public and private publishers, and Namık Kemal and Çanakkale Onsekiz Mart Universities Faculty Members of Agriculture and Tekirdağ Viticulture Research Institute researchers who work on viticulture in the study area.

Method

Data Collection and Sampling Method

Purpose-oriented data in the study were collected through questionnaires conducted with one-on-one interviews with farmers engaged in viticulture, publishers working on viticulture, and researchers involved in research on viticulture.

The districts and villages where the farmer survey will be conducted were determined by the purposive sampling method. Districts with a vineyard area over 25% of the total surface area of the province were determined as the districts to be surveyed. It was aimed to be built with three villages with the highest vineyard area in the districts and 15 producers, 5 farmers in each village. The farmers to be surveyed were selected using the random numbers table. The publishers to be surveyed were fully counted, and the staff working in the Provincial and District Directorates of the Ministry of Agriculture, representatives of the Chambers of Agriculture, cooperatives, unions, etc. producer organizations, employees of the agricultural units of the municipalities, pesticides, fertilizers, sapling dealers, representatives of people and businesses that buy grapes, and freelance of the four provinces that carry out publishing activities related to viticulture in the study area were determined as agricultural consultants. A total of 90 farmers and publishers were surveyed and their distribution by districts is shown in Table 2.

It is aimed to survey all researchers and faculty members who have conducted or are conducting research on viticulture in four provinces within the scope of the study. Questionnaires were conducted with 13 research staff of Tekirdağ Viticulture Research Institute and 12 faculty members from different departments of Agriculture Faculties of Namık Kemal and Çanakkale Onsekiz Mart Universities.

In the surveys made with the farmers; personal and institutional relations of farmers with publishers and researchers regarding viticulture activities, in publisher surveys; Extension and viticulture experiences, extension studies related to viticulture, relations with farmers and researchers, and researcher surveys were asked to determine: extension and viticulture experiences, relations with farmers and publishers, farmer and publisher education studies.

The questionnaires were carried out by asking multiple-choice, Yes/No, True/False choice, open/closed questions. In the questionnaire questions, 5-point Likert scale questions were included in a large amount, analysis and evaluations were also used. Likert-type questions include a statement containing an attitude or opinion about the subject under investigation and options indicating the level of agreement with this statement and are widely used by researchers (Turan et al., 2015).

Table 2. Provinces and districts where farmer and publisher surveys were made

No	Provinces	Districts	Number of farmers surveyed	Number of publishers surveyed
1	Tekirdağ	Şarköy ve Süleymanpaşa	30	18
2	Edirne	Uzunköprü	15	15
3	Kırklareli	Merkez	15	9
4	Çanakkale	Bayramiç ve Bozcaada	30	8
Total			90	59

Data Analysis Methods

The data received in the electronic environment were analyzed and interpreted using the SPSS package statistics program, crosstables, % frequency distribution, etc. and simple descriptive statistics, and some non-parametric statistical methods.

Concerning the main objectives of the study, the level of farmers' relationship with researchers and publishers was used as dependent variables, the ratio of viticulture income within agricultural incomes, the ratio of young viticulturists and new viticulturists within enterprise groups were used as independent variables. To determine the appropriate test method, the variables were first subjected to the normal distribution test with the Kolmogorov-Smirnov test. It was decided to apply the Mann-Whitney H and Kruskal-Wallis U tests because there were variables that did not show normal distribution (Özdamar, 1999; Miran, 2002).

At the level of relationship of farmers with publishers; A face-to-face interview with Provincial and District Directorate personnel (publisher) about viticulture in the past year, regularly continuing this meeting, and being included in the SMS network of the Ministry's, were used. Positive answers to questions about these criteria are given one point, negative ones are given zero points, and the scores for all criteria are summed, and the total score of the farmer on the subject is determined. Then, it is proportioned to the maximum positive score it can get on the subject and multiplied by 100 to make the score index. The group of producers with an index of less than 50% was accepted as "negative", and the group with an index greater than 50% was considered "positive". Farmers with a calculation rate of 50% and above are divided into two groups as “high” and those below “low” level (Özkaya, 1996).

At the level of relationship between farmers and researchers; 7 criteria such as knowing the research institution related to viticulture, contacting the Faculty of Agriculture, regularly meeting with a researcher from these institutions, visiting, reporting problems, receiving training, and reading a research result report were used and farmers with a calculation rate of 50% and above are divided into two subgroups as “high” and those below “low” level.

Findings and Discussion

Farmer Profile in the Study Area and Viticulture Features

Farmer Profile

The average agricultural experience of the surveyed farmers in the study area is 35.3 years and the average viticulture experience is 30.2 years, and it is noteworthy that Çanakkale and Tekirdağ farmers have higher viticulture experience (Table 3).

In the sustainability of viticulture, which is a labor-intensive agricultural activity, the age of the farmer is important in terms of having the physical characteristics sufficient to perform some production activities in countries such as Türkiye, where the owner of the business and the person performing the production activities are the same people or in countries with a high share of the family workforce. Likewise, the presence of a mass of farmers, that is, new viticulturalists, should be considered as an important parameter for the continuation of viticulture. In the study area, the average farmer age is 54,8, the young vineyardist rate is 7.5% and the new vineyardist rate is 12.5%. In all provinces, the age of farmers is over 50. Kırklareli has the oldest farmer population. While Çanakkale is the province with the highest number of viticulturists under the age of 40 with a rate of 23.3%, there are no viticulture farmers under the age of 40 among the surveyed farmers in Edirne and Kırklareli. Edirne (26.7%) is the province with the highest

Table 3. Characteristics of farmers regarding agriculture and viticulture in the examined enterrprises

No	Provinces	Age	Agriculture experience (year)	Viticulture experience (year)	Young vineyardist (%)	New vineyardist (%)
1	Tekirdağ	55.6	36.2	34.0	6.7	6.7
2	Edirne	58.9	33.7	27.0	0.0	26.7
3	Kırklareli	62.3	35.9	24.3	0.0	13.3
4	Çanakkale	53.4	35.5	35.3	23.3	3.3
Average		57.6	35.3	30.2	7.5	12.5

Table 4. General characteristics of the inspected businesses in terms of viticulture

No	Provinces	Vineyard area per business (da)	Parcel/vineyard size (da)	Average age of vineyard (year)	The ratio of young vineyard (%)	The ratio of vineyard without trellis system (%)	The ratio of vineyard with wire training system (%)
1	Tekirdağ	23.52	7.26	23.1	18.3	80.7	19.3
2	Edirne	11.63	6.46	12.3	44.4	48.2	51.8
3	Kırklareli	14.20	7.10	18.1	46.7	26.7	73.3
4	Çanakkale	43.00	9.70	23.4	29.3	75.9	24.1
Average		23.09	7.63	19.2	34.7	57.9	42.1

concentration of (New vineyard) farmers who have been growing viticulture for 10 years, followed by Kırklareli (13.3%). It is noteworthy that the rates of new viticulturalists are low in Tekirdağ and Çanakkale, which are known as the largest wine-growing provinces in the study area.

The highest vineyard area per farm was seen in Çanakkale with 43.00 decares, and the lowest vineyard area was seen in Edirne province farmers with 11.63 decares. The average size of a parcel, in other words, a vineyard, is 7.63 da in enterprises, and all of the provinces are below 10 decares. The oldest vineyards are located in Çanakkale at 23.4 years of age and in Tekirdağ, another important vineyard province of the study area, with an average age of 23.1 years. The provinces of Edirne and Kırklareli draw attention to the fact that the vineyards under the age of 10 are 44.4% and 46.7%, respectively, compared to the other two. In the ratio of vineyards in the high-wire training system, the two most important wine-growing provinces of the study area, Tekirdağ, and Çanakkale are far behind with 19.3% and 24.1% respectively. This is because there are older vineyards in these two provinces and that these have been established in the goble production system (Table 4).

Vineyard areas in 75% of the enterprises are smaller than 20 da (Table 5). Edirne is the province with the highest number of enterprises under 5 da (26.7%), while Çanakkale is the province with the highest number of enterprises with more than 50 decares (23.3%).

Viticulture is carried out in 31.7% of the total agricultural area of the enterprises. In Tekirdağ, 63% of the total agricultural areas of the enterprises and approximately half (47.6%) in Çanakkale constitute vineyard areas (Table 6). As an important indicator of agricultural activity in enterprises, the income of that activity is taken as a basis within the total agricultural income. In this respect, only viticulture income constitutes the agricultural income of 16.7% of the enterprises. In Tekirdağ and Çanakkale provinces, these rates are 26.7% and 20%, respectively, which shows how important viticulture is for these provinces.

Persons and Organizations Farmers Consulted on Grape Cultivation Issues

The most consulted persons and organizations are pesticide dealers in the control diseases and pests and fertilization, and the personnel of the Ministry of Agriculture and Forestry Provincial / District Directorates in other matters, and the research institution in the region. Neighbors, relatives, and acquaintances of farmers draw attention as people consulted on many issues (Table 5).

Table 5. Persons and organizations consulted for the solution of basic breeding problems

Topics of problems seeking solutions	Most consulted institutions rates of consultation
Spraying (controlling diseases and pests)	1. Dealers: 56.9% 2. Ministry of agriculture and forestry provincial/district Directorates: 24.6% 3. Research institution: 4.6%
Fertilizer application	1. Dealers: 29.0% 2. Ministry of agriculture and forestry provincial/district directorates: 25.8% 3. Neighbors, acquaintances, etc.: 16.1%
Variety selection	1. Ministry of agriculture and forestry provincial / district directorates: 31.0% 2. Grape buyers and firms: 24.1% 3. Research institution: 7.7%
Sapling supply	1. Researchers: 78.2% 2. Nursery: 13.0% 3. Grape buyers and firms: 4.3%
Support systems	1. Ministry of agriculture and forestry provincial/district directorates: 50.0% 2. Neighbors, acquaintances, etc.: 33.3% 3. Research institution: 11.1%
Vineyard plant	1. Research Institution 31.5% 2. Ministry of agriculture and forestry provincial/district directorates: 25.0% 3. Grape buyers and firms: 18.8%
Trellis system	1. Ministry of agriculture and forestry provincial/district directorates: 43.8% 2. Research foundation: 25.0% 3. Faculty of agriculture: 18.8%
Summer pruning	1. Ministry of agriculture and forestry provincial/district directorates: 45.5% 2. Neighbors, acquaintances, etc.: 27.3% 3. Research institution: 18.2%
Tillage	1. Ministry of agriculture and forestry provincial/district directorates: 37.5% 2. Neighbors, acquaintances, etc.: 25.0% 3. Grape fields 12.5%, research institution: 12.5%
Winter pruning	1. Ministry of agriculture and forestry provincial/district directorates: 57.1% 2. Neighbors, acquaintances, etc.: 14.3% 3. Research institution: 14.3%
Irrigation	1 Faculty of agriculture: 50.0% 2. Ministry of agriculture and forestry provincial/district directorates: 25.0% 3. Neighbors, acquaintances, etc.: 25.0%

Table 6. Training Meetings and Participating Farmer Ratios

Training Meeting Topics	The ratio of Participating Farmers (%)
General Viticulture	23.3
New Grape Varieties	5.6
Pruning and Grafting	4.4
Controlling Diseases and Pests	4.4
Training and Support Systems in the Vineyard	3.3
Fertilization in the Vineyard	1.1
Irrigation in the Vineyard	1.1
Other Topics	2.2
Total	45.3

Viticulture Training Received by Farmers

Farmers' meetings were held on with participation of 44.4% of the surveyed farmers (40 farmers) on different topics of viticulture (Table 6). The meeting topics were mainly on general viticulture, the definition of new grape varieties, pruning and vaccination, and control diseases and pests. 37.5% of the meetings were held by the Ministry's publication organization, 32.5% by the Research Institutes, and 17.5% by the municipalities (Table 7).

It is seen that most of the enterprises in the study area have received training on viticulture in the last 10 years. This rate is 43.3% only in Çanakkale and more than half of the enterprises in other provinces have received training on viticulture (Table 8).

Publisher Profile in the Study Area, Features in Terms of Viticulture and Extension Activities in the Region

In the provinces in the study area, interviews were conducted with a total of 50 publishers, including the Ministry's publication organization (Provincial/District Directorates), that is, agricultural publishers in the public sector and those who operate pesticides, saplings, fertilizers, etc., freelance agricultural consultants, and private agricultural publishers such as the Chamber of Agriculture (Table 9).

The average duration of publishing activities related to viticulture by publishers is 12.4 years. Publishers expressed their satisfaction with their viticulture-related extension activities according to the scale (Scale: Not at all satisfied (1) Dissatisfied (2) Partly satisfied (3) Satisfied (4) Strongly satisfied (5)); They rate their knowledge of viticulture as 3.82 (Satisfied) and 3.36 (Partly sufficient) according to the scale (Scale: 1: I am not at all competent 2: I am inadequate 3: I am partially sufficient 4: I am competent 5: I am an expert level).

Publishers were asked with question, "What do you feel lack of knowledge about viticulture?" and asked to answer according to the scale (Table 10). Accordingly, publishers feel the most lack of information on rootstock and grape varieties, which is not more frequent than "Sometimes". In other words, the lack of knowledge of the publishers is quite low.

To the publishers, "Who is the person or organization with whom you exchange

Table 7. Persons and organizations organizing training meetings

Organizers	Rate (%)
Ministry of Agriculture and Forestry, Department of Training and Publication	45.0
Research Institutes	32.5
Municipalities	17.5
University	2.5
Other Persons and Organizations	2.5
Total	100.0

Table 8. The proportion of farmers with high Level of viticulture education

No	Provinces	Rate (%)
1	Tekirdağ	63.3
2	Edirne	66.7
3	Kırklareli	53.3
4	Çanakkale	43.3

Table 9. Distribution of Publishers by Workplaces

Publishers' Workplace	Number	Rate (%)
Ministry of Agriculture and Forestry Provincial/District Directorate	21	42.0
Agrochemical, Fertilizer, Seed Dealer	15	30.0
Chamber of Agriculture Staff	10	20.0
Freelance Consultant	3	6.0
Other (Municipal)	1	2.0
Total	50	100.0

Table 10. Issues that publishers feel lack of knowledge about viticulture

Topics	Scale*
Rootstock selection	3.18
Grape Varieties	3.14
Vineyard planting technique	2.86
Pruning	2.68
Markets/agricultural policies	2.66
Fertilization	2.40
State subsidies for viticulture	2.38
Agricultural control	2.08

* *Scale: 1: Never 2: Rarely 3: Sometimes 4: Usually 5: Always*

Table 11. Publishers' sources of information on viticulture

Resources	Scale*
Viticulture research organizations experts	2.54
My colleague working in the Publication Organization of the Ministry of Agriculture and Forestry	2.52
Our related professors from the Faculty of Agriculture	2.52
Other (Pharmaceutical company, etc.)	1.57
Other research institutes experts	1.56

* *Scale: 1: Never 2: Rarely 3: Sometimes 4: Usually 5: Always*

Table 12. Time publishers can allocate for publication in provinces

No	Provinces	The ratio of publication activities during working hours (%)	The ratio of viticulture in extension activities (%)	Agricultural publication time (min/day)	Viticulture publication time (min/day)
1	Tekirdağ	28.6	17.6	137.3	24.2
2	Edirne	27.0	9.9	129.6	12.8
3	Kırklareli	37.8	37.3	181.4	67.6
4	Çanakkale	28.3	19.4	135.8	26.3
Region Average		29.7	19.0	142.6	27.1

information about viticulture the most?" was asked. The average of the answers given according to the 5-point Likert scale is shown in Table 11. Accordingly, publishers apply to someone else about viticulture with a frequency not exceeding "Sometimes" and this person is mostly experts in viticulture research institutions and their colleagues in the extension organization.

To find the time that the publishers allocate to publishing activities during their working hours, ask the publishers "What percentage of your work do you devote to publishing activities? What is the share of viticulture-oriented ones among all publishing activities?" The average of the answers given was 29.7% and 19%, respectively. In Kırklareli province, both total extension and viticulture extension activities are higher than in the provinces. Edirne province is the lowest in this respect. Extension activities were related to viticulture in the daily (8 hours) work of a publisher average of 27.1 minutes/day. If this figure is for Ministry of Agriculture and Forestry personnel; 49.2 min/day (Table 12). It turns out that the share of public publishers in the extension activities on viticulture in the study region is higher than the private sector publishers.

Researchers' Profile, Viticulture Features, and Extension Activities in the Region

A survey was conducted with a total of 24 researchers, including 12 faculty members from Namık Kemal University Agriculture Faculty, 11 researchers from Tekirdağ Viticulture Research Institute, and 1 faculty member from Çanakkale Onsekiz Mart University Faculty of Agriculture, operating in the field of viticulture.

The average duration of research work on viticulture: 12.3 years, satisfaction with research

work on viticulture according to the scale (Scale: Not at all satisfied (1) Dissatisfied (2) Partly satisfied (3) Satisfied (4) satisfied (5)) Average 4.47 (Absolutely Satisfied) and average 3.79 (Satisfied) according to the same scale, satisfaction with publishing activities related to viticulture.

The number of researchers who completed their master's degree in a viticulture-related subject is 10; The number of researchers who completed their doctorate on a viticulture-related subject is 11.

In the researcher profile 54.1% of them work at the university and 45.9% at the research institute. 41.7% of the researchers graduated from horticultural departments of agricultural faculties.

Until today, 87.5% of the researchers have conducted a research study on viticulture. The number of completed research studies in the study area is 49 and 51% (25) was shared with the publication organization. Completed research studies; vine breeding, developing new varieties, developing production/breeding techniques, adaptation, plant nutrition, irrigation, controlling diseases and pests, food technology of grape products, economic analysis, preservation, marketing, producer organization, agricultural insurance practices in viticulture, etc. on various topics. Of these, 77.6% are applied research, the outputs of which can be used directly by farmers, and 22.4% are basic research. In a study conducted in Manisa Viticulture Research Institute in 1999, it was determined that 10% of the researches are basic, 20% are adaptation, and 70% are strategic and applied researches for the solution of a problem or the production of new technology. Prominent resources for researchers to follow innovations; scientific articles, publications on the internet, participation in symposiums, and congresses (Table 13).

"Do you carry out extension (farmer training) activities related to viticulture?" The average of the answers given to the question according to the scale (Scale: 1: Never 2: Sometimes 3: Yes 4: Often 5: Continuously): 2.21 (Sometimes). Researchers can allocate approximately 11.4 days to extension studies for farmers throughout the year. There were producers who received information from them verbally according to 54.1% of the researchers. The number of farmers who receive information in this way in the research area is 90, and the average number of farmers who receive verbal information from a researcher during the year is approximately 3.8. It was stated by 54.2% of the researchers that there were farmers who received information from them by phone or e-mail, and a total of 181 farmers received information in this way.

12 researchers were involved in 19 research studies under farmer conditions, and 21.1% of these studies could not be completed,

Table 13. Sources to follow innovations and levels of researchers

Sources	*Scale
Scientific articles	4.21
Internet	4.21
Symposium/congress/panel	3.50
Fairs	2.58
Newspaper/magazine	2.21
Overseas trips	1.92
Tv	1.92
Other	1.25

**Scale. 1: Never 2: Sometimes 3: Normal 4: Often 5: Definitely*

Table 14. Frequency of researchers to share research results with farmers

Sharing Frequency	Number of Researchers
None	5
1 time per year	3
2 times a year	2
1 time in 3 months	2
When the research is concluded	12

mainly due to farmer-related reasons. It was stated that 42.1% of these studies under farmer conditions had a farmer contribution, 57.9% of these studies were related to the farmer and 57.9% of them had an attitude of ownership.

Table 14 shows the frequency of transferring research results to farmers. Researchers prefer to transfer as a result of their research work.

It was found that 50% of the researchers worked as trainers in the theoretical and practical training studies for publishers and farmers organized in their institutions. The frequency of training activities for publishers and farmers in research institutions is shown in Table 15. According to this, 75% of the researchers carry out training studies depending on the demands of the publishers and producers.

Researcher-Publisher-Farmer Relations

Farmer-Publisher Relations

Knowing, reaching, regularly meeting with the Ministry's extension organization personnel or unit, which farmers can apply to and consult about viticulture when necessary, visits by the publishers themselves, and the extension organization's contact with them via SMS were evaluated in terms of examining these relations. For this purpose, farmers were asked to answer various questions, and the answers given were shown in Table 16 by proportioning the number of farmers. Except for the regular meetings of the farmers with the extension staff responsible for viticulture, the average of the answers to all questions is above or very close to 50%. This can be considered good in terms of farmers' relations with public broadcasters. However, raising the rates to higher levels will make more serious contributions to the extension activities related to viticulture.

In the last five years 20% of publishers have organized a viticulture-related course for farmers. In the last five years, approximately 887 farmers have been trained in 20 courses organized by publishers. In 4 of these courses, the support of university lecturers and 3 of them from research institutes, and 4 of them from other organizations (private sector, exporter, pharmaceutical company, a fertilizer company, etc.) were provided by expert trainers. Approximately 40% of the publishers (20 publishers) stated that they held 120 farmers' meetings on various topics of viticulture in the last year. Publishers consider that on average 35.2% of the recommendations conveyed to farmers are adopted.

In the light of these data, it is possible to evaluate the relationship level of publishers with farmers as a medium.

Table 15. Frequency of publisher and farmer training in research institutions

Scale	Publisher training	Farmer training
When there is demand	54.2	50.0
1 per year	20.8	25.0
Never done	20.8	20.8
2 per year	4.2	4.2
Total	100.0	100.0

Table 16. Relations of farmers with publishers

Questions/answers	Rate(%)
Can you reach the agronomist responsible for viticulture at the Ministry of Agriculture and Forestry Provincial/District Directorate when necessary?	75.6
Do you know the personnel or department you will consult about viticulture in the Ministry of Agriculture and Forestry Provincial/District Directorate?	54.5
Regarding viticulture, do agriculturalists visit you or your vineyard at least once a year during the production period?	72.2
Have you or any of your family members had face-to-face contact with the Ministry of Agriculture and Forestry personnel about viticulture in the last year?	61.1
Are you being warned by the Ministry of Agriculture and Forestry Provincial/District Directorate with a text message about viticulture such as the time and form of controlling diseases and pests in the vineyard?	57.8
Do you regularly meet with the agriculturalist responsible for viticulture in the province/district of the ministry of agriculture and forestry?	34.4

Farmer-Researcher Relations

The rate of farmers who are aware of the existence of a research institution to which they can report a viticulture problem in their region is 63.3% (57 people), and the rate of those who know Tekirdağ Viticulture Research Institute is 93%, the rate of those who know Manisa Viticulture Research Institute is 15.8%, and the rate of those who know about Atatürk Horticultural Central Research Institute is 3.5%. The rate of those who visit any research institute is 31.1% (Table 17). The ratio of the answers given to the other questions in terms of the number of farmers is extremely low. In general, the relationship level of farmers with research institutions and researchers working on viticulture can be considered weak. The same evaluation is valid for the relations of universities with the Faculties of Agriculture.

In the light of these data, it is possible to evaluate the relationship level of researchers with farmers as weak.

Publisher-Researcher Relations

The relations between Research Institutions and publishers on viticulture are moderate (2.94) according to the 5-point Likert scale of the publishers. In a study conducted in Manisa in 1999, it was emphasized that the relations between the publisher and the research were also weak (Boyacı, 1999). 43% of the publishers stated that they received training on viticulture in a research institution.

It is stated that 56% of publisher's have a researcher who has visited them in the last five years and 34% of the publisher's state that in the last 5 years, meetings have been held by the Research Institutions about the research results related to viticulture in their provinces. Again, the rate of publishers stating that they have been sent a research report within the last five years is 20%.

It was stated that 18% of publishers received training on viticulture in a research institution. The views of the publishers regarding the visits of the viticulture expert personnel in the research institutions to the vineyard growers in your region in the last 5 years are given in Table 18. According to this, only 54% of the publishers stated that the researchers visited the local vineyards.

There are 25 research studies shared with the publishers in the research area. Sharing of studies can be in more than one way. However, to give a distribution over the number of completed research studies; delivering the final report to the publishers is 76%, sharing by meeting is 28%, and sending the leaflet/brochure to the publishing organization is 32%. The rate of informing the publishers about the research studies completed through the visit is 20%. Publisher-Research relations can be evaluated as weak in general. In a study conducted in Manisa in 1999, it was emphasized that the publisher was equally weak in research (Boyacı, 1999).

Table 17. Relations of farmers with research institutions

Questions/Answers	Rate (%)
Do you know any Research Institutions that you can refer to solve a problem related to viticulture?	63.3
Have you visited any Research Institution about Viticulture?	31.1
Have you ever relayed the problem that you could not solve in viticulture to a "Research Organization"?	18.9
Is there a "Research Organization or staff" that you are in regular contact with?	21.1
Have you read any "Research Report" on viticulture?	13.3
Have you had contact with the faculties of agriculture about viticulture?	24.4
Have you attended any training on viticulture at any Research Institution?	10.0

Table 18. Visits by researchers to local vineyards in the last 5 years according to publishers

	Number of publishers	Rate (%)
Yes	27	54.0
No	11	22.0
No idea	12	24.0

The Effects of Some Important Characteristics of Farmers on Their Relationships with Researchers and Publishers

The fact that the farmers are young viticulturist, new viticulturist and innovative, and the size of the farm and relatively high viticulture income; statistical analysis methods were used, as explained in the method section of the study, with the assumptions of their relations with researchers and publishers, that they can contribute to the training they organize and that they can increase the vineyard areas in their businesses. For this purpose, firstly, cross-tabulations were made between the farm groups that the farmers are involved in, the share of viticulture income in agricultural income, the status of being new viticulturist, young viticulture and innovativeness, their participation in viticulture training, the status of receiving training contributions from publishers and researchers, and their relations with publishers and researchers (Tables 19, 20, 21 and 22).

Only 18.9% of the enterprises have a high level of relationship with researchers and it was found that large enterprises have a lower rate of relationship with researchers than other groups. 53.3% of the farmers have a high level of relationship with publishers, and this ratio is highest in enterprises between 6-20 da (54.5%). The ratios of farmers who contributed to viticulture education from publishers and researchers are 37.8% and 23.3%, respectively (Table 19).

It is seen that the group with viticulture incomes between 76-100% of total agricultural income has a higher level of relationship with researchers (50% of the enterprises), and this

Table 19. Effects of business size groups on their relationships with researchers and publishers

Dependent variables	Ratios of farmers by business groups (%)				
	≤5 da	6-20 da	21-50 da	21-50 da	Overall
Level of relationship with researchers (Pearson Chi-Square: 2.315 and p: 0.510)					
Low	71.4	85.5	80.0	69.2	81.1
High	28.6	14.5	20.0	30.8	18.9
Total	100.0	100.0	100.0	100.0	100.0
Relationship level with publishers (Pearson Chi-Square: 0.343 and p: 0.952)					
Low	57.1	45.5	46.7	46.2	46.7
High	42.9	54.5	53.3	53.8	53.3
Total	100.0	100.0	100.0	100.0	100.0

Table 20. Effects of viticulture incomes on the relationship levels of farmers with publishers and researchers

Dependent variables	The ratio of farmers by share of viticulture income in total agricultural income (%)						
	%10≤	%11-25	%26-50	%51-75	%76-100	Total	Overall
Level of relationship with researchers (Pearson Chi-Square: 5.359 and p:0.374)							
Low	100.0	80.8	82.4	80.0	50.0	76.5	81.1
High	0.0	19.2	17.6	20.0	50.0	23.5	18.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Relationship level with publishers (Pearson Chi-Square: 1.501 and p:0.913)							
Low	45.5	42.3	47.1	40.0	50.0	58.8	46.7
High	54.5	57.7	52.9	60.0	50.0	41.2	53.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table 21. Effects of innovation on relations with publishers and researchers

Dependent variables	Ratios of farmers by innovation level (%)		
	Low	High	Overall
Level of relationship with researchers (Pearson Chi-Square: 4.061 and p:0.044)			
Low	83.3	50.0	81.1
High	16.7	50.0	18.9
Total	100.0	100.0	100.0
Relationship level with publishers (Pearson Chi-Square: 0.459 and p:0.498)			
Low	47.6	33.3	46.7
High	52.4	66.7	53.3
Total	100.0	100.0	100.0

Table 22. Effects of young vineyardist's relationship levels with publishers and researchers

Dependent variables	Young vineyardist ratios (%)		
	≤40 years	41≥ years	Overall
Level of relationship with researchers (Pearson Chi-Square: 2.329 and p:0.127)			
Low	100.0	79.0	81.1
High	0.0	21.0	18.9
Total	100.0	100.0	100.0
Relationship level with publishers (Pearson Chi-Square: 1.607 and p:0.205)			
Low	66.7	44.4	46.7
High	33.3	55.6	53.3
Total	100.0	100.0	100.0

group is followed by enterprises whose agricultural income is entirely from viticulture. In general, it is seen that the enterprises whose viticulture incomes have a high place in the total agricultural income are more in contact with the researchers. In terms of relations with publishers, the groups showed close ratios, while the group with a ratio of 50-75% of viticulture income in total agricultural income stood out, it is remarkable that this group had a higher relationship with researchers (Table 20).

While 50% of the farmers with a high level of relationship with researchers are at a high innovativeness level, it is 16.7% in the low innovative group (Table 21). Two-thirds of farmers with a high level of innovation also have a high level of relationship with publishers. It is seen that a high level of innovation can make positive contributions to the EQF relations.

In Table 22, the relationship levels of farmers with publishers and researchers in young viticulture enterprises (farmer enterprises under the age of 40) were examined. While they have never had a relationship with researchers, the rate of those who have a high level of relationship with publishers is 33.3%. The same rates of the other group are 21% and 55.6%, respectively.

Conclusions and Suggestion

Results

There are no significant problems in terms of knowing, reaching, and relations with the Ministry Provincial/District Directorates personnel responsible for viticulture. 75.6% of the farmers stated that they could reach the agronomist responsible for viticulture in the Provincial/District Directorate of Agriculture and Forestry when necessary, and 72.2% of the farmers stated that they visited themselves or their vineyards at least once a year.

The time that a publisher responsible for the publication activities related to viticulture in the Provincial/District Directorates of the Ministry can allocate to the publication activities related to viticulture in a daily (8 hours) overtime is 49.2 minutes/day.

Publishers apply to experts from viticulture research organizations to obtain information with a frequency not exceeding "Sometimes". Topics that publishers feel the most lack of information about are rootstock, grape varieties and vineyard establishment.

Publishers state that only 35.7% of their suggestions were adopted by farmers. They also stated that 18% of them received training on viticulture in a research institution. The level of relationship between farmers and researchers is high in Tekirdağ and Kırklareli provinces, and if there is a Research Institute in the same province, it is possible to evaluate the results as relatively better.

Until today, the number of research studies completed by researchers is 49, and 51.0% (25) has been shared with the publication organization. 77.6% of these are applied research whose output can be used directly by farmers. On average, approximately 3.8 farmers received verbal information from a researcher and 7.5 farmers received information via telephone during the year.

The practices that will contribute to the development of cooperation between publishing and research institutions are to focus on educational activities of publishers, to organize joint projects, demonstrations, studies, and meetings by research and publication institutions, and to make institutional visits more frequently.

Researcher-Farmer relations were weak,

Publisher-Farmer relations were at medium level, and Researcher-Publisher relations were weak.

Suggestion

1. With the instructions issued by the Ministry, a positive reflection of these regulations on practice can be achieved by giving importance to the monitoring and inspection of the practices carried out with the "Agricultural Innovation and Information System", "Agricultural Innovation and Information Sharing in the Electronic Environment" and "Dissemination Projects for the Dissemination of Agricultural Innovations", which have been put into effect in recent years.
2. It should be checked whether the Project Results Implementation Plan included in the Republic of Türkiye Ministry of Agriculture and Forestry General Directorate of Agricultural Research and Policies Research Management Implementation Guide is implemented. In addition, necessary expenditure items should be included in the budgets of research projects in this regard.
3. The personnel of the provincial organization of the Ministry can not go to the field sufficiently due to the workload. This situation should be resolved with personnel reinforcement.
4. It should be ensured that the work of the Coordination and Agricultural Data Branch in the Provincial Directorates of Agriculture or the work of the extension staff in other branches should be reorganized to be more effective.
5. Education and extension units in Research Institutes should be more active.

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Conflicts of Interest

The authors declare that there is no conflict of interest.

Author Contribution

Author MAK compiled the data of statistics and economy. Authors made critical revision of the manuscript for intellectual content. All authors read and approved the final manuscript.

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