

# Women Entrepreneurship in Organic Agriculture: The Case of Türkiye

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### ABSTRACT

Organic agriculture, whose importance is increasing day by day, is a form of production that prohibits the use of harmful substances in agricultural production and prioritizes soil health in order to protect human health and the ecological system. As in every subject, entrepreneurs are needed for the development of the sector in organic agriculture. In this context, while women entrepreneurs contribute to the production process on the one hand, on the other hand, they gain social and economic self-sufficiency. The aim of this research is to determine the entrepreneurial levels of women engaged entrepreneurial activities in organic agriculture. In the research, the survey technique was used within the scope of the quantitative research method. The population of the research consists of women entrepreneurs engaged in organic agriculture activities in different regions and provinces of Türkiye. 532 women entrepreneurs selected by judgmental sampling method were determined as the sample of the research. According to the results of the research, it was determined that there was a significant difference in general agricultural entrepreneurship levels in terms of education level and marital status, but not in terms of age, geographical region, and industry experience, while there was a significant difference in organic agriculture entrepreneurship levels s in terms of age and education level, but not in terms of marital status, geographical region, and industry experience. In conclusion, this research is valuable in terms of revealing the current situation of women entrepreneurship in organic agriculture, which is an extremely important sector.

# Agricultural Economy

#### Research Article

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# Organik Tarımda Kadın Girişimciliği: Türkiye Örneği

# ÖZET

Günümüzde önemi her geçen gün artan organik tarım, insan sağlığını ve ekolojik sistemi korumak için tarımsal üretimde zararlı maddelerin kullanımını yasaklayan ve toprak sağlığını ön planda tutan bir üretim biçimidir. Her konuda olduğu gibi organik tarımda da sektörün gelişimi için girişimcilere ihtiyaç bulunmaktadır. Bu bağlamda kadın girişimciler bir yandan üretim sürecine katkı sağlarken diğer yandan ekonomik kendilerine öz sosyal ve açıdan veterlilik kazandırmaktadır. Bu araştırmanın amacı, organik girişimcilik faaliyetinde bulunan kadınların girişimcilik eğilimlerini belirlemektir. Araştırmada nicel araştırma yöntemi kapsamında anket tekniği kullanılmıştır. Araştırmanın evrenini Türkiye'nin farklı bölge ve illerinde organik tarım faaliyetinde bulunan kadın girişimciler oluşturmaktadır. Yargısal örnekleme yöntemi ile seçilen 532 kadın girişimci araştırmanın örneklemi olarak belirlenmiştir. Araştırmanın sonuçlarına göre genel tarımsal girişimcilik düzeyinde eğitim düzeyi ve medeni durum açısından anlamlı bir farklılığın olduğu, yaş, coğrafi bölge ve sektör deneyimi açısından ise anlamlı bir farklılığın olmadığı, organik tarım girişimcilik düzeyinde ise yaş ve eğitim düzeyi açısından anlamlı bir farklılığın olduğu, medeni durum, coğrafi bölge ve sektör deneyimi açısından ise anlamlı bir farklığın olmadığı belirlenmiştir.

# Tarım Ekonomisi

## Arastırma Makalesi

# Makale Tarihçesi

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# Anahtar Kelimeler

Organik tarım Tarımsal girişimcilik Kadın girişimciliği Girişimcilik düzeyi Sonuç olarak, bu araştırma son derece önemli bir sektör olan organik tarımda kadın girişimciliğinin mevcut durumunu ortaya koyması açısından değerlidir.

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### INTRODUCTION

Today, the rapid population growth in the world is constantly increasing the need for food. The difficulty of the food industry in meeting this demand brings along the search for new production techniques. Since the early 20th century, emerging and rapidly developing technology also affected the agricultural sector and led to the transformation of this sector. Innovations in the agricultural sector also affect the production process. In terms of the agricultural sector, production refers to the yield obtained from the soil. In accordance with the new world order and human needs, producers strive to obtain the maximum level of product in a short time, and at this point, they benefit from technological opportunities. This leads to an increase in the use of chemicals in the food industry. These chemicals, fertilizers, hormones, and inorganic substances that increase production and thus profit, disrupt the ecological balance and threaten the environment and human health. In order to eliminate or minimize the effects of this negative situation, humanity is turning to organic agriculture as a form of production that does not harm human health, protects the ecosystem, and does not destroy natural resources. Organic agriculture is a form of production that essentially prohibits the use of chemical pesticides and fertilizers, but adopts the principle of organic and green fertilization, alternation, soil conservation, increasing plant resistance, and using biological control, and prioritizes product quality rather than production increase (DOKAP, 2018). Saving on chemical input costs, contractual purchase guarantee, creation of a new employment area, increasing demand for quality/healthy products and high prices are among the important advantages of organic agriculture. The disadvantages of this production method include the lack of specialized personnel equipped in organic agriculture, the negative impact of modern production in nearby regions, and fluctuations in supply (Hatunoğlu Durmaz, 2010). Therefore, as in every field, entrepreneurship is undoubtedly needed for the development of the sector in organic agriculture.

Entrepreneurship is one of the key concepts of the economy. Before the concept of entrepreneurship, it is necessary to talk about the entrepreneur who performs this activity. An entrepreneur is a person who transforms existing capital into investment by taking various risks and producing goods and services to meet human needs. According to Zimmerer and Scarborough (1998), an entrepreneur is a person who evaluates opportunities by calculating the risk and creates a new business or enterprise by collecting the necessary resources to create capital in order to reach profit under uncertainty. Entrepreneurs are characterized by risk-taking, seeing opportunities and needs, pooling resources, being open to innovation and evaluation, starting new businesses, and producing new products (Çetinkaya Bozkurt & Alparslan, 2013; Demiryürek & Demir, 2018). Entrepreneurship is an organized form of entrepreneurial activity. In other words, the establishment and execution of an enterprise by taking into account the possibility of profit/loss and the sum of the activities in this process are considered entrepreneurship. While entrepreneurship was initially accepted as a simple commercial activity, today, in parallel with technological developments, it is expanding into a field where elements such as brands, patents, and knowledge are used as capital to create added value. On the other hand, it is possible to come across examples of entrepreneurship in the local context that aim to develop in rural areas within the context of regional development. One of these examples is the initiatives carried out by women, who are disadvantaged in many aspects of society, in the field of organic agriculture. It can be said that the activities carried out by women entrepreneurs in this field make significant contributions to them. On the other hand, women are an important part of society and have an important role in the fulfillment of many services in society. The socio-economic process has undergone change and transformation with the entry of women into working life. While the presence and status of women in business life continue to increase day by day, the phenomenon of entrepreneurship has also been affected by this situation and women entrepreneurs have emerged. More than one concept is used to define women entrepreneurs. In general, the terms "businesswoman" and "woman entrepreneur" are used synonymously. However, a woman entrepreneur means "someone who does business on her own behalf". A businesswoman is understood as a woman who works in a workplace. Women entrepreneurs are creative, courageous, visionary, self-confident, open to innovation, highly skilled in achieving economic independence, and able to create employment for others by establishing and operating a business by adapting to family and social life. Since women entrepreneurs have a greater tendency to take risks, it can be said that, unlike other women, they are more determined and more willing to plan their future (Keskin, 2014). Entrepreneurial women are not only those who establish and run a business but also those who manage their own careers. They are intelligent, independent, and assertive individuals who can fight against

difficulties to achieve their goals, constantly review their expectations and business endeavors, and have a significantly high social awareness (Moore, 2000).

There are many studies on women's entrepreneurship in the national and international literature, and in the literature review, women's entrepreneurship has been examined within the scope of rural development, agriculture, and organic agriculture. Alston (2003) tried to reveal the contribution of women to the agricultural sector, tried to explain the dimensions of this contribution, and focused on the process of women entrepreneurs receiving the return for their labor. She emphasized that agriculture in Australia is at a critical point in terms of globalization and taking part in the world market and therefore women's entrepreneurship in agriculture is very important. Sahin (2006) examined the profile of women entrepreneurship in Konya province and concluded that women entrepreneurs engage in entrepreneurial activities as a necessity to meet family needs. Marchesoni and De Ros (2009) concluded that although the number of women entrepreneurs in the province of Trento in Italy is increasing, it is not yet at the desired level and that women are making good use of the opportunities offered by new fields of activity in marketing despite their disadvantaged position in the agricultural sector. Davasligil (2011) examined the role of women's entrepreneurship in rural development and concluded that social, cultural, and economic factors such as education level, number of children, migration status, marital status, and wage level are determinants in women's entrepreneurship. Erem Kaya and Atsan (2013) found that rural women who are young and have high incomes have higher levels of adoption of organic agriculture. In addition, educational status, land ownership, frequency of watching developments related to agriculture on television programs, and participation in training were determined as other factors affecting rural women's adoption of organic agriculture. Zaridis et al. (2015) stated that with the development of the agricultural sector, the role of rural women in agricultural production and organization has developed and this encourages women's entrepreneurship. They concluded that the level of vocational education of rural women is effective on their entrepreneurial tendencies and that women entrepreneurs face some economic and managerial problems. Marangoz et al. (2016) stated that there are many factors that lead women to entrepreneurship in rural areas such as the lack of other options for work, the desire to be their own boss, the inheritance of the family business, taking on the responsibility of economic livelihood due to the death of the spouse and success motive. Karaturhan et al. (2018) found that factors such as being raised in a family engaged in farming, education level, number of children, working in agricultural work, receiving vocational training, being open to innovations, taking part in projects related to women, being aware of organic agriculture, and having personal income affect the likelihood of rural women to adopt organic agriculture. Bakay et al. (2020), based on the example of the Demirci district of Manisa province, concluded that women's entrepreneurship provides many advantages such as self-confidence, economic freedom, strong communication, social environment, power, activism, dignity, and a sense of success. Aggarwal and Johal (2021) stated that rural women entrepreneurship is recognized as an important value in academic research and government policies. They also found that women's entrepreneurship has become popular in recent years, the most articles in this field have been published in India, the most cited studies are from the United Kingdom, and the existing studies focus on the factors affecting women's entrepreneurship.

When the statistics of the Ministry of Agriculture and Forestry of the Republic of Türkiye are analyzed, it is understood that Türkiye is making progress in organic agriculture every year and the export of organic products has increased compared to the previous year. For example, it is seen that the amount of organic product exports increased from 51,320,336 kg in 2022 to 59,185,999 kg in 2023 (T.R. Ministry of Agriculture and Forestry, 2024). However, it can be said that women have an important role in organic agriculture in Türkiye as in the world, and in this context, the number of women entrepreneurs is increasing day by day. While the rate of women entrepreneurs was 13.1% in 2002, it increased to 17.4% in 2023 (With Female Entrepreneurs, 2024). The main objective of this research is to determine the entrepreneurial levels of women engaged in entrepreneurial activities in the organic agriculture sector in Türkiye. In this context, the research has 3 sub-objectives: (1) To examine women's general agricultural entrepreneurship levels in terms of demographic variables (earning income, personal satisfaction, gaining social status, providing employment opportunities, contributing to the national economy, providing social benefits and desire to work independently, etc.), (2) To examine women's entrepreneurial levels towards organic agriculture in terms of demographic variables (transforming organic agriculture knowledge into practice, implementing innovations in the field of organic agriculture and finding solutions to problems, etc.), (3) To determine women's thoughts about the consequences of being an entrepreneur (reflections of entrepreneurship in women's life). This research is considered to be important in terms of revealing the profile of women entrepreneurship in organic agriculture, which is an extremely important sector in terms of both human and environmental health. It is extremely important for women who are disadvantaged in Türkiye to gain economic competence and social status by taking part in the organic agriculture sector as entrepreneurs.

#### MATERIAL and METHOD

In the research, the general agricultural entrepreneurship levels, organic agriculture entrepreneurship levels, and thoughts on the results of being an entrepreneur of women who are engaged in entrepreneurship activities in the organic agriculture sector in Türkiye were investigated using the survey technique. In this context, it was examined whether the general agricultural and organic agriculture entrepreneurship levels of women differ according to the demographic variables of age, education level, marital status, geographical region, and industry experience. In line with the relevant literature and the objectives of the study, 2 main hypotheses and 10 subhypotheses were developed:

 $H_1$ : The general agricultural entrepreneurship levels of women entrepreneurs show a significant difference in terms of demographic variables.

 $H_{1a}$ : The general agricultural entrepreneurship levels of women entrepreneurs show a significant difference in terms of age.

 $H_{1b}$ : General agricultural entrepreneurship levels of women entrepreneurs show a significant difference in terms of education level.

H<sub>1c</sub>: The general agricultural entrepreneurship levels of women entrepreneurs show a significant difference in terms of marital status.

H<sub>1d</sub>: The general agricultural entrepreneurship levels of women entrepreneurs show a significant difference in terms of geographical region.

H<sub>1e</sub>: General agricultural entrepreneurship levels of women entrepreneurs show a significant difference in terms of industry experience.

 $H_2$ : Organic agriculture entrepreneurship levels of women entrepreneurs show a significant difference in terms of demographic variables.

 $H_{2a}$ : Organic agriculture entrepreneurship levels of women entrepreneurs show a significant difference in terms of age variable.

H<sub>2b</sub>: Organic agriculture entrepreneurship levels of women entrepreneurs show a significant difference in terms of education level.

 $H_{2c}$ : Organic agriculture entrepreneurship levels of women entrepreneurs show a significant difference in terms of marital status.

H<sub>2d</sub>: Organic agriculture entrepreneurship levels of women entrepreneurs show a significant difference in terms of geographical region.

 $H_{2e}$ : Organic agriculture entrepreneurship levels of women entrepreneurs show a significant difference in terms of industry experience variable.

A quantitative research method was used in the study. In this context, the questionnaire technique was preferred in the data collection phase. The questionnaire form consists of four sections. In the first part; there is a "Demographic Information Form (DIF)" consisting of 12 questions aiming to determine the demographic characteristics of the participants. In the second part, there is the "General Agricultural Entrepreneurship Scale (GAES)" which aims to measure the general agricultural entrepreneurship levels of the participants and consists of 14 items. The third section includes the "Organic Agricultural Entrepreneurship Scale (OAES)", which aims to measure the participants' organic agricultural entrepreneurship levels and consists of 10 items. In the fourth section, there is the "Consequences of Being an Entrepreneur Scale (CBES)" consists of 10 items, that aim to determine the participants' thoughts on the consequences of being an entrepreneur. In the development of GAES and OAES, Can and Engindeniz (2017) "Young people's agricultural entrepreneurship tendencies: A sample research in Türkiye" and Esmer and Gıdık (2020) "A Research on the determination of agricultural entrepreneurship tendencies of organic agriculture students" were used. A 5-point Likert-type scale 1: Not important, 2: Less important, 3: Undecided, 4: Important, 5: Very important) was used to rate these scales. In the development of CBES, Şahin (2006) research titled "The woman entrepreneurs and an application about the profile of woman entrepreneurs in Konya" was utilized. This scale is graded on a 5-point Likert scale (1: Strongly disagree, 2: Disagree, 3: Undecided, 4: Agree, 5: Strongly agree) scale was used. In the analysis process of the study, an average score level was obtained for these scales and these scores were used in all analyses.

The population of the research consists of women entrepreneurs engaged in organic agriculture activities in Türkiye. In this context, 532 women entrepreneurs selected by convenience sampling method were determined as the sample of the research. In the literature, with a confidence level of 95% and a margin of error of 5%, the minimum sample size over the maximum population is 384, and accordingly, it can be said that the sample size is sufficient (Yazıcıoğlu & Erdoğan, 2004). Ethics committee approval was obtained from the Bayburt University

Ethics Committee in order to conduct research on the determined sample (Date: 31/05/2021 and Decision Number: 2021/118). The survey form was delivered to the participants electronically between November 7-23, 2021 and feedback was provided.

Statistical analysis of the data was performed with the SPSS 22.0 package program. Cronbach's Alpha (a) values were examined to test the reliability of the scales, and as a result of the reliability analysis, it was seen that GAES (0.914), OAES (0.960) and CBES (0.966) were highly reliable according to Cronbach's Alpha (a) values (Kayış, 2009).

#### RESULTS and DISCUSSION

Since the scales used in the study were developed by utilizing other scales in the literature, Exploratory Factor Analysis (EFA) was used to test the construct validity of the scales. EFA is an analysis technique that aims to explain the factor structure of a newly developed or translated scale (Yaşlıoğlu, 2017). EFA results are given in Table 1.

Table 1. EFA results

Çizelge 1. Açıklayıcı Faktör Analizi (AFA) bulguları

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Scales	Factor means	Explained cumulative variance (%)	KMO	Sig.
GAES	0.684	48.91	0.833	0.000
OAES	0.744	74.45	0.887	0.000
CBES	0.776	77.60	0.871	0.000

When the EFA results in Table 1 are examined, it is seen that the KMO values of the scales are well above the level of 0.5, indicating that the scales are in good condition in terms of sampling adequacy (Field, 2009). In addition, the factor means of the scales are above 0.40 (Hair Jr et al, 2014). These results prove that all scales have construct validity.

The frequency (f) and percentage (%) results regarding the demographic variables of age, marital status, nature of the place where the participants grew up, educational level, geographical region of residence, entrepreneurship training status, and industry experience are given in Table 2.

Table 2 shows that 69.7% of the participants were married and 30.3% were single. 36.2% of the participants were between the ages of 18-30, 38% between 31-45, 13.2% between 46-60, and 12.6% between 61 and above, indicating that more than half of the participants belonged to the young and middle age group. It was determined that 35.3% of the participants live in rural areas and 64.7% in urban areas, and it is noteworthy that there is a high rate of women entrepreneurs engaged in organic agriculture in cities. It is noteworthy that 44% of the participants are primary school graduates, 9.9% are secondary school graduates, 26.3% are high school graduates, 17.7% are undergraduate graduates, 2.1% are postgraduate graduates, and 19.8% of women entrepreneurs have undergraduate and postgraduate education. This situation shows that organic agriculture is a field of endeavor and earning for people with high levels of education as well as people with low levels of education living in rural areas. Of the participants, 30.4% live in Marmara, 15.8% in Central Anatolia, 13.2% in Mediterranean, 12.8% in Aegean, 11.1% in Southeastern Anatolia, 9.4% in Black Sea and 7.3% in Eastern Anatolia. In general, it can be said that the number of women entrepreneurs engaged in organic agriculture decreases as we move from west to east. The proportional distribution of the participants according to the regions is very different, and it can be said that this is due to the fact that women in the western regions have a higher awareness of organic agriculture. It is also possible to say that this is a result of the sample. It is seen that 16% of the participants have received entrepreneurship training and 84% have not received entrepreneurship training, and it is thought that very few of the women entrepreneurs have received training on entrepreneurship and this is due to the prevalence of entrepreneurship training and women's awareness on this issue. When the sector experience results are examined, it is understood that 35.3% of the participants have less than 1 year, 19% of the participants have 1-5 years of experience, 13.2% of the participants have 6-10 years of experience, 32.5% of the participants have 11 years or more of organic agriculture sector experience, approximately 1/3 of the participants are new to organic agriculture and approximately 1/3 of the participants are very experienced in this field.

Table 3 presents the frequency (f) and percentage (%) results of the sources of venture capital, size, types, fields of activity, and employee qualifications/number of enterprises established by women entrepreneurs in the organic agriculture sector.

When Table 3 is analyzed, it is seen that 63.9% of women entrepreneurs used equity as venture capital, 30.3% borrowed/loaned, and 8.8% applied for grants, and it is understood that a significant portion of women entrepreneurs established their enterprises with equity. It is seen that 85.9% of the enterprises are small-scale,

11.7% are medium-scale, 2.4% are large-scale, and most of the enterprises are small-scale. It can be said that 85.5% of the enterprises are agricultural production enterprises, 11% are agricultural product processing enterprises and 3.2% are agricultural marketing enterprises, and these ratios are in parallel with the results of enterprise size. 74.3% of the enterprises are engaged in crop production (olive, vegetable, and fruit), 14.4% in both crop production and animal production (two fields), 9% in animal production, and 2.3% in beekeeping. It is seen that in 23.7% of the enterprises, women entrepreneurs work only by themselves, while in 2.4% of the enterprises they work together with their families. In addition, 52.4% of the enterprises have 1-5 employees, 11.1% have 5 or more employees, and this situation varies in 10.5% of the enterprises. It is possible to say that this situation is due to the fact that most of the enterprises are small-scale enterprises and seasonal changes in labor demand.

Table 2. Demographic results

Çizelge 2.	Demografik	bulgular

Demographic variables		f	%
Marital status	Married	371	69.7
	Single	161	30.3
	Total	532	100
Age	18-30	193	36.2
	31-45	202	38.0
	46-60	70	13.2
	61 and above	67	12.6
	Total	532	100
Nature of place of growth	Rural area	188	35.3
	Urban region	344	64.7
	Total	532	100
Education level	Primary school	234	44.0
	Middle school	53	9.9
	High school	140	26.3
	License	94	17.7
	Postgraduate	11	2.1
	Total	532	100
Geographical region	Marmara	162	30.4
	Central Anatolia	84	15.8
	Mediterranean	70	13.2
	Aegean	68	12.8
	Southeast Anatolia	59	11.1
	Black Sea	50	9.4
	Eastern Anatolia	39	7.3
	Total	532	100
Entrepreneurship training status	Yes	85	16.0
	No.	447	84.0
	Total	532	100
Industry experience	Less than 1 year	188	35.3
	1-5 years	101	19.0
	6-10 years	70	13.2
	11 years and above	173	32.5
	Total	532	100

Descriptive statistical results including frequency (f), mean, standard deviation (SD), skewness, and kurtosis values for the general agricultural and organic agriculture entrepreneurship levels of the participants are given in Table 4.

When Table 4 is examined, it is seen that the participants' general agricultural entrepreneurship levels (X=3.65±1.315) and organic agriculture entrepreneurship levels (X=3.82±1.285) are close to the level of "4: Important". It is understood that women's thoughts on the results of being an entrepreneur (X=3.44±1.469) are similarly close to the level of "4: Agree". Accordingly, it can be said that the participants' entrepreneurial levels and their thoughts on the consequences of being an entrepreneur are above the middle level. In addition, whether the data are normally distributed was evaluated by looking at the skewness and kurtosis values. Whether the data are normally distributed was evaluated by looking at the skewness and kurtosis values. According to Tabachnick

and Fidell (2013), skewness and kurtosis values should be between -1.5 and +1.5 for the data to show normal distribution. When the values in Table 4 are examined, it is understood that all three-scale data are normally distributed. Therefore, it was deemed appropriate to use parametric tests (Independent Sample T-test and ANOVA Analysis) to test the hypotheses.

Table 3. Results regarding enterprises Cizelge 3. İşletmelere ilişkin bulgular

Variables		f	%
Source of venture capital	Equity	340	63.9
	Debt/credit	145	30.3
	Grant	47	8.8
	Total	532	100
Enterprise size	Small scale	457	85.9
	Medium scale	62	11.7
	Large scale	13	2.4
	Total	532	100
Enterprise type	Agricultural production	455	85.5
	Agricultural product processing	60	11.3
	Agricultural marketing	17	3.2
	Total	532	100
Field of activity	Crop production	395	74.3
	Crop and animal production	77	14.4
	Animal production	48	9.0
	Beekeeping	12	2.3
	Total	532	100
Employee qualification/number	Herself/himself	126	23.7
	Family	13	2.4
	1-5	279	52.4
	5 and above	59	11.1
	Changing	56	10.5
	Total	532	100

Table 4. Descriptive statistical results Cizelge 4. Tanımlayıcı istatistiki bulgular

Scales	f	Mean	SD	Skewness	Kurtosis
GAES	532	3.65	1.315	-0.301	-0.683
OAES	532	3.82	1.285	-0.660	-0.263
CBES	532	3.44	1.469	-0.229	-1.193

The frequency (f) and percentage (%) results of the general agricultural entrepreneurship levels of the participants on the basis of scale items are given in Table 5 (Scale Question: Please rate your general objectives for being an entrepreneur in the agricultural sector according to their importance).

According to Table 5, the items with the highest rate of "very important" are "meeting the needs of the family (57.3%)", "personal tastes and preferences (55.3%)", "meeting individual needs (52.1%)", "working independently (51.9%)" and "making good use of time (51.1%)". According to these findings, although women mostly engage in entrepreneurial activities to provide for the family, it is understood that they also engage in entrepreneurial activities for other purposes such as personal tastes and preferences such as hobbies, individual needs, the desire to work independently and to make good use of time. In this context, Şahin (2006) stated that women entrepreneurs mostly engage in entrepreneurial activities as a necessity and that factors such as personal satisfaction and self-realization remain weak in entrepreneurship preference.

The frequency (f) and percentage (%) results of the participants' organic agriculture entrepreneurship levels on the basis of scale items are given in Table 6 (Scale Question: Please rate your objectives for becoming an entrepreneur in the organic agriculture sector according to their importance).

According to Table 6, it is seen that the issues that the participants see at the "very important" level are "to increase the awareness and consciousness of organic agriculture (52.3%)", "to implement innovations in the field of organic agriculture (48.3%)" and "to popularize organic agriculture (47.2%)" respectively. Accordingly, it can be said that women engage in entrepreneurship activities in organic agriculture mostly to promote organic agriculture, to increase awareness of organic agriculture, to implement innovations in the field of organic agriculture, and to popularize organic agriculture. In addition, it is seen that the option of "utilizing the organic agriculture resources

in the country" is at the level of "important (41.4%)". Karaturhan et al. (2018) found that factors such as being open to innovations and being conscious about organic agriculture affect the likelihood of women adopting organic agriculture.

 ${\bf Table\ 5.\ General\ agricultural\ entrepreneurship\ level}$ 

Çizelge 5. Genel tarımsal girişimcilik düzeyi

Items/frequency and	Not im	portant	Less i	mportant	Undeci	ded	Impor	rtant	Very i	mportant
percentage	f	%	f	%	f	%	f	%	f	%
Ensure high profits	81	15.2	25	4.7	179	33.6	78	14.7	169	31.8
	91	17.1	21	3.9	161	30.3	93	17.5	166	31.2
Providing personal fulfillment	91	17.1	49	9.2	157	29.5	33	6.2	202	38.0
	96	18.0	44	8.3	231	43.4	55	10.3	106	20.0
Contributing to the national economy	35	6.6	22	4.1	116	21.8	83	15.6	276	51.9
Gaining social status	95	17.9	18	3.4	170	31.9	61	11.5	188	35.3
	74	13.9	23	4.3	122	22.9	67	12.6	246	46.3
Working independently	33	6.2	44	8.3	115	21.6	46	8.6	294	55.3
	33	6.2	5	0.9	179	33.6	92	17.3	223	42.0
Providing employment opportunities	147	27.6	47	8.8	151	28.4	108	20.3	79	14.9
	44	8.3	11	2.1	121	22.7	51	9.6	305	57.3
Staying motivated and working	64	12.0	10	1.9	122	23.0	64	12.0	272	51.1
	12	2.3	44	8.3	139	26.1	82	15.4	255	47.9
Personal tastes and preferences	14	2.6	15	2.8	172	32.3	54	10.2	277	52.1

Table 6. Organic agriculture entrepreneurship level

Çizelge 6. Organik tarım girişimcilik düzeyi

Items/frequency and	Not in	nportant	Less i	mportant	Undeci	ded	Impor	rtant	Very i	mportant
percentage	f	%	f	%	f	%	f	%	f	%
To transform organic agriculture knowledge into practice	93	17.5	2	0.4	136	25.6	80	15.0	221	41.5
Contributing to the organic agriculture sector	36	6.7	53	10.0	149	28.0	67	12.6	227	42.7
Offering organic agricultural products to consumers	57	10.7	7	1.3	192	36.1	44	8.3	232	43.6
To utilize the organic agricultural resources in the country	69	13.0	14	2.6	25	4.7	220	41.4	204	38.3
Applying innovations in the field of organic agriculture	44	8.3	5	0.9	145	27.3	81	15.2	257	48.3
Agricultural production according to organic conditions	88	16.5	4	0.8	147	27.6	68	12.8	225	42.3
Contributing to the spread of organic agriculture	46	8.6	49	9.2	127	23.9	91	17.1	219	41.2
Promoting organic agriculture		6.4	5	0.9	172	32.3	70	13.2	251	47.2
To produce solutions to problems in the field of organic agriculture	46	8.6	12	2.2	153	28.8	94	17.7	227	42.7
Increasing awareness and awareness of organic agriculture	15	2.8	1	0.2	155	29.1	83	15.6	278	52.3

The frequency (f) and percentage (%) results of the participants' thoughts on the consequences of being an entrepreneur on the basis of scale items are given in Table 7 (Scale Question: Please mark the extent to which you agree with the following statements about the consequences of being an entrepreneur in the organic agriculture sector).

Table 7. Consequences of being an entrepreneur *Çizelge 7. Girişimci olmanın sonuçları* 

Items/frequency and percentage	Strongly	Undecided		Agree		Strongly agree				
	f	%	f	%	f	%	f	%	f	%
Being an entrepreneur increased my self-confidence.	111	20.9	14	2.6	8	1.5	213	40.0	186	35.0
Being an entrepreneur helped me understand the world better.	75	14.1	181	34.0	29	5.5	66	12.4	181	34.0
Being an entrepreneur has improved my human relations.	39	7.3	135	25.4	87	16.4	68	12.8	203	38.1
Being an entrepreneur helped me learn the realities of life.	48	9.0	120	22.6	19	3.6	132	24.8	213	40.0
Being an entrepreneur provided me with economic independence.	51	9.6	123	23.1	54	10.2	123	23.1	181	34.0
Being an entrepreneur enabled me to express myself better.	88	16.5	122	22.9	45	8.5	93	17.5	184	34.6
Being an entrepreneur gave me a social identity.	55	10.3	170	32.0	39	7.3	98	18.4	170	32.0
Being an entrepreneur allowed me to dream.	49	9.2	123	23.1	60	11.3	95	17.9	205	38.5
Being an entrepreneur made me a role model.	53	9.9	136	25.6	39	7.3	103	19.4	201	37.8
Being an entrepreneur increased my reputation within the family.	65	12.2	142	26.7	64	12.0	50	9.4	211	39.7

When Table 7 is examined, it is seen that the options with the highest thoughts of the participants regarding the results of being an entrepreneur are "becoming an entrepreneur enabled me to learn the facts of life (40%)", "becoming an entrepreneur increased my reputation in the family (39.7%)", "becoming an entrepreneur enabled me to dream (38.5%)" and "becoming an entrepreneur improved my human relations (38.1%)", respectively. Accordingly, it can be said that as a result of becoming an entrepreneur, women have learned the facts of life, their reputation in the family has increased, they have started to dream and their relationships with people have improved. In addition, it can be understood from the related findings that being an entrepreneur increases women's self-confidence. Similarly, Bakay et al. (2020) concluded that being an entrepreneur provides advantages to women in many areas such as self-confidence, economic independence, communication skills, and social prestige.

Whether the general agricultural and organic agriculture entrepreneurship levels of the participants differ in terms of age variable was evaluated by ANOVA analysis and the results of the analysis are given in Table 8 ( $H_{1a}$  and  $H_{2a}$ ).

Table 8. ANOVA analysis results according to age variable Cizelge 8. Yas değiskenine göre ANOVA analizi bulguları

Scales	Age	N	Mean	F	Sig.
	18-30	193	-		
GAES	31-45	202	-	0.37	0.657
	46-60	70	-		
	61 and above	67	-		
	18-30	193	4.01		
OAES	31-45	202	3.95	0.20	0.037
	46-60	70	3.67		
	61 and above	67	3.65		

When Table 8 is examined, it is determined that there is no significant difference in general agricultural entrepreneurship levels in terms of age variable (Sig.>0.05), while there is a significant difference in organic agriculture entrepreneurship levels (Sig.<0.05). Therefore,  $H_{1a}$  is rejected and  $H_{2a}$  is accepted. In this case, looking at the averages, it can be said that women's organic agriculture entrepreneurship levels decrease with increasing age. Erem Kaya and Atsan (2013) concluded that young women have higher levels of adoption of organic agriculture.

Whether the general agricultural and organic agriculture entrepreneurship levels of the participants differ in terms of education level was evaluated by ANOVA analysis and the results of the analysis are given in Table 9 ( $H_{1b}$  and  $H_{2b}$ ).

Table 9. ANOVA analysis results according to education level variable

Çizelge 9. Eğitim düzeyi değişkenine göre ANOVA analizi bulguları

Scales	Education level	N	Mean	F	Sig.		
	Primary School	234	4.09				
	Middle School	53	3.91				
GAES	High School	140	3.67	8.19	0.046		
	License	94	3.36				
	Postgraduate	11	3.22				
	Primary School	234	4.23				
OAES	Middle School	53	4.04	8.01	0.021		
OAES	High School	140	3.95	0.01	0.021	0.021	
	License	94	3.37				
	Postgraduate	11	3.51				

When Table 9 is examined, it is determined that there is a significant difference (Sig.<0.05) in both general agricultural and organic entrepreneurship levels in terms of education level, and  $H_{1b}$  and  $H_{2b}$  are accepted. In this case, when the averages are considered, it can be said that women's general agricultural and organic agriculture entrepreneurship levels differ slightly in terms of education level. Zaridis et al. (2015) concluded that the level of vocational education of rural women is effective on their entrepreneurial levels.

Whether the general agricultural and organic agriculture entrepreneurship levels of the participants differ in terms of marital status was evaluated by Independent Sample T-Test and the test results are given in Table 10 ( $H_{1c}$  and  $H_{2c}$ ).

Table 10. T-test results according to marital status variable

<u>Cizelge 10. Medeni durum değişkenine göre t-testi bulguları</u> Scales Marital N Mean Homogeneity

Scales	Marital	N	Mean	Homogeneity	of	F	Sig.	t	Sig.
	status			variances					(2-tailed)
GAES	Married	371	3.91	Homogeneous		0.753	0.387	-2.498	0.014
	Single	161	3.39	Not homogeneous				-2.509	0.013
OAES	Married	371	-	Homogeneous		0.109	0.742	-1.517	0.132
	Single	161	-	Not homogeneous				-1.498	0.137

When Table 10 is examined, the fact that Sig. values of general agricultural and organic agriculture entrepreneurship levels are greater than 0.05 showing that the variances are homogeneous. In this case, when Sig. (2 tailed) values are examined, it is understood that there is a significant difference in general agricultural entrepreneurship levels in terms of marital status variable (Sig2.<0.05), while there is no significant difference in organic agriculture entrepreneurship levels (Sig2.<0.05). Therefore, H<sub>1c</sub> is accepted and H<sub>2c</sub> is rejected. Therefore, when the averages are examined, it is seen that the general agricultural entrepreneurship levels of married women are at a lower level, but it can be said that this situation is due to the social and economic concerns of married women. Davasligil (2011) stated that marital status affects women's entrepreneurial levels.

Whether the general agricultural and organic agriculture entrepreneurship levels of the participants differ in terms of geographical region variable was evaluated by ANOVA analysis and the results of the analysis are given in Table 11 ( $H_{1d}$  and  $H_{2d}$ ).

Table 11. ANOVA analysis results by geographical region variable

Çizelge 11.	Coğrafi bölge değişkenine göre ANOVA a	analizi bulguları
Scales	Geographical region	N

Scales	Geographical region	N	F	Sig.
GAES	Mediterranean	162		0.103
	Eastern Anatolia	84	7.41	
	Aegean	70		
	Southeast Anatolia	68		
	Central Anatolia	59		
	Black Sea	50		
OAES	Marmara	39		0.241
	Mediterranean	162		
	Eastern Anatolia	84		
	Aegean	70		
	Southeast Anatolia	68	6.83	
	Central Anatolia	59		
	Black Sea	50		
	Marmara	39		

When Table 11 is examined, it is determined that there is no significant difference (Sig.>0.05) in both general agricultural and organic entrepreneurship levels in terms of geographical region, and H<sub>1d</sub> and H<sub>2d</sub> are rejected. Accordingly, it is possible to say that women's general agricultural and organic agriculture entrepreneurship levels are similar in terms of geographical region.

Whether the general agricultural and organic agriculture entrepreneurship levels of the participants differ in terms of industry experience variable was evaluated by ANOVA analysis and the findings of the analysis are given in Table 12 (H<sub>1e</sub> and H<sub>2e</sub>).

Table 12. ANOVA analysis results according to industry experience variable Cizelge 12. Sektör denevimi değişkenine göre ANOVA analizi bulguları

Scales	Industry	N	F	Sig.	
	Experience				
	Less than 1 year	188			
GAES	1-5 years	101			
	6-10 years	70	4.41	0.351	
	11 years and above	173			
	Less than 1 year	188			
OAES	1-5 years	101			
	6-10 years	70	7.05	0.673	
	11 years and above	173			

When Table 12 is examined, it is determined that there is no significant difference in both general agricultural and organic entrepreneurship levels in terms of industry experience (Sig.>0.05) and H<sub>1e</sub> and H<sub>2e</sub> are rejected. Accordingly, it can be said that women's entrepreneurial levels are similar in terms of organic agriculture experience.

The acceptance/rejection status of all hypotheses developed within the scope of the research on whether women's general agricultural and organic agriculture entrepreneurship levels differ according to the demographic variables of age, education level, marital status, geographical region, and industry experience are shown in Table 13.

When Table 13 is analyzed, some of the sub-hypotheses (H<sub>1b</sub>, H<sub>1c</sub>, H<sub>2a</sub>, H<sub>2b</sub>) are accepted and some of them (H<sub>1a</sub>, H<sub>1d</sub>, H<sub>1e</sub>, H<sub>2c</sub>, H<sub>2d</sub>, H<sub>2e</sub>) are rejected. Accordingly, it can be said that the entrepreneurial levels of women in organic agriculture partially differ in terms of demographic variables. Therefore, H<sub>1</sub> and H<sub>2</sub> are partially accepted. In support of this finding, Davasligil (2011) concluded that social and economic factors such as education level, marital status, number of children, and wage amount are effective on women's entrepreneurial activities.

Table 13. Acceptance/rejection of hypotheses Cizelge 13. Hipotezlerin kabul/ret durumları

Hypothesis	Accept/Reject
$H_1$	Partially acceptance
$H_{1a}$	Rejection
$\mathrm{H}_{\mathrm{1b}}$	Acceptance
$\mathrm{H}_{1\mathrm{c}}$	Acceptance
$ m H_{1d}$	Rejection
$\mathrm{H}_{1\mathrm{e}}$	Rejection
$H_2$	Partially acceptance
$\mathrm{H}_{1\mathrm{e}}$	Rejection
$\mathrm{H}_{2\mathrm{a}}$	Acceptance
$\mathrm{H}_{2\mathrm{b}}$	Acceptance
$ m H_{2c}$	Rejection
$ m H_{2d}$	Rejection
$ m H_{2e}$	Rejection

#### CONCLUSION

The endangerment of human health, the deterioration of ecological balance, and the remembrance of the importance of the relations between humans, nature, and other living things have led people to healthy production and consumption. Organic agriculture, which is defined as a way of obtaining high nutritional value and healthy products by not using harmful substances in the production process and processing the soil correctly, has become an important sector in Türkiye as well as in the world, showing development day by day. Entrepreneurship, which promises innovation and progress in terms of its nature, is an important phenomenon for the organic agriculture sector as in every sector. An entrepreneur is defined as a person who transforms his/her capital into investment in order to gain profit or benefit by producing goods and/or services by taking some risks, and entrepreneurship is defined as this activity itself. In order to be a successful entrepreneur, it is necessary to have some characteristics. Rational behavior, foresight, seizing opportunities, communication skills, and crisis management are some of these characteristics. In recent years, it has been observed that women have become entrepreneurs in many fields and have gained social/economic gain in this way. One of these areas is the agricultural sector. It can be seen that especially women living in rural areas and somehow involved in agricultural production do not get a return for their labor. It is highly likely that rural women will prevent labor exploitation through entrepreneurship. In addition, women living in these regions are in a disadvantaged position due to various reasons such as education, living conditions, and gender roles. For this reason, entrepreneurship for rural women is not only a source of income but also a gateway to life. For rural women, entrepreneurship can be said to be the beginning of a new story whose protagonists are themselves.

The main objective of this research conducted in Türkiye is to determine the entrepreneurial levels of women in organic agriculture. In this context, the sub-objectives of the research are to determine the general agricultural entrepreneurship levels of women, to reveal their entrepreneurship levels in organic agriculture, and to determine their thoughts about the results of being an entrepreneur. According to the results of the hypotheses developed in line with these objectives, it was determined that there was a significant difference in terms of education level and marital status in general agricultural entrepreneurship levels, while there was no significant difference in terms of age, geographical region, and industry experience. In organic agriculture entrepreneurship levels, it was determined that there was a significant difference in terms of age and education level, while there was no significant difference in terms of marital status, geographical region, and sector experience. On the other hand, it was determined that women generally engage in entrepreneurship activities to provide for the family, personal tastes and preferences such as hobbies, individual needs, desire to work independently and to make good use of time. In terms of organic agriculture, it has been determined that they engage in entrepreneurship activities in order to promote organic agriculture, increase awareness of organic agriculture, implement innovations in the field of organic agriculture, and popularize organic agriculture. Within the scope of the results of being an entrepreneur, it was concluded that as a result of becoming an entrepreneur, women learned the realities of life, their reputation increased within the family, they started to dream, their relationships with people improved and their selfconfidence increased. These results reveal that entrepreneurship provides significant benefits for women not only in terms of economic but also social and personal development.

Although many factors have an impact on the transition to organic agriculture, it can be said that the most important factor is "health". The fact that many diseases, especially cancer, are increasing day by day and that these diseases rank high in the causes of death requires questioning the quality of the food consumed and consumption behaviors. In this regard, experts state that the prerequisite for a healthy diet is natural nutrition. This situation reveals the importance of organic agriculture once again. In another respect, organic agriculture has opened an economic door for women living in disadvantaged positions in rural areas. As in many examples, women entrepreneurs earn economic gains by marketing the products they produce in the enterprises they have established with their initiatives. These entrepreneurial women are able to become economically independent and socialize together. In this respect, they can be role models for many similar women in Türkiye. Therefore, this research, it was tried to raise awareness by revealing the current situation of women's entrepreneurship in organic agriculture and to contribute to the development of both fields by linking the organic agriculture sector and women's entrepreneurship. As a result of the research, it has been observed that women entrepreneurs have achieved significant gains in many aspects of their activities in the field of organic agriculture and offer significant outputs to society. For this reason, it is recommended to organize training on organic agriculture for women, support projects on this subject, carry out activities to raise awareness on the subject, support women entrepreneurs, for the state to provide resources to those concerned, make tax regulations on organic products and to ensure media visibility. On the other hand, it can be said that it would be very useful to conduct qualitative research using face-to-face interview techniques in order to examine the entrepreneurial levels of women in organic agriculture in depth in future studies.

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## Contribution Rate Statement Summary of Researchers

The authors declare that they have contributed equally to the article.

# **Conflict of Interest**

The authors declare that there is no conflict of interest between them.

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