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The Socio-Demographic Structure of Cattle Farming in Kars Province

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ABSTRACT

This study aimed to identify the socio-demographic structure, producer profiles, reasons for animal husbandry, and the main problems faced by cattle farming enterprises in Kars province. Data were collected through a face-to-face survey conducted with 244 cattle breeders and analyzed using SPSS frequency and chi-square analyses. The findings indicate that the vast majority of cattle breeders are middle-aged, with a primary education level predominantly high school. The participation of the young population in the sector is quite low. It was determined that 66% of the producers continue animal husbandry as their father's profession, while 29.5% engage in it to earn additional income. 99.6% of the participants perceive milk prices as low, and 95.1% consider themselves inadequate in animal husbandry and breeding. Participation in training programs is quite low, and information sources are largely limited to neighbouring breeders. Furthermore, statistically significant relationships were found between the age groups of the producers and both the livestock population and the reasons for animal husbandry. In conclusion, while cattle farming in Kars province maintains its traditional structure, a lack of knowledge and training in the sector is noteworthy. Encouraging young people, producer training, and economic support mechanisms are crucial for the sustainability of the sector.

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INTRODUCTION

As the world's population rapidly grows, countries that fail to sufficiently increase food production are becoming increasingly dependent on foreign sources and, in some cases, are facing hunger. It widely recognized that societies lacking adequate and balanced nutrition cannot achieve health, productivity, or economic and social welfare. In a globalized world where competitiveness is vital across all sectors, the livestock industry, and particularly cattle farming, faces new challenges and opportunities (SERKA, 2017; Teber, 2019).

In our country, cattle farming is mostly carried out in the Eastern Anatolia Region due to its high altitude and continental climate. When cattle farming is mentioned, cattle breeding, especially for meat and milk production, plays a critical role in supporting the national economy through the application of improved production methods. Buffalo farming, on the other hand, is less popular than in the past, and the number of animals is gradually decreasing (Tapkı et al., 2018).

Kars, with its natural pastures and meadows, is known as a livestock centre. These rangelands are composed of approximately 55- 65% pastures and meadows, 23-30% legumes, and 13-15% other plant species (Kocaman, 2014; Demir, 2015). Due to the region's limited development in the service and industrial sectors and the unsuitability of the climate for fruit and vegetable production, livestock farming has become the primary economic activity in the area (SERKA, 2017). According to the 2025 data from the Turkish Statistical Institute (TÜİK), the number of cattle in Kars province is 604.208 (Table 1). While the prevalence of hybrid and culture breeds has increased, there has been a noticeable decline in local breeds (TÜİK, 2025). Although cattle farming remains a primary source of rural life in Eastern Anatolia Region, few studies have examined the socio-demographic profile of producers, their reasons for engaging in livestock activities, and the challenges they face in a changing agricultural landscape. This lack of empirical research limits the development of targeted interventions and policy recommendations tailored to the region (Akkaya, 2015; SERKA, 2017; TÜİK, 2025).

Table 1. Change in cattle presence in Kars province by year (TÜİK, 2025)

Years	Catte (Culture)	Cattle (crossbred)	Cattle (Local)	Total
2015	75.418	325.887	41.244	442.549
2016	82.774	328.301	40.271	451.346
2017	100.474	334.605	32.245	467.324
2018	111.157	307.840	31.054	450.051
2019	147.388	408.326	41.187	596.901
2020	150.573	415.691	41.427	607.691
2021	154.181	424.199	42.280	620.660
2022	154.157	424.200	42.241	620.598
2023	54.647	520.120	40.512	615.279
2024	55.159	510.209	38.840	604.208

This study aimed to fill this gap by identify the socio-demographic structure, farmers profiles, reasons for engaging in animal husbandry, and the main problems faced by cattle farms in Kars Province. The results are expected to provide insights for enhancing sustainability, increasing youth participation, and improving the effectiveness of support programs in the sector.

MATERIALS and METHODS

Ethical Statement

This study was approved by the Atatürk University Faculty of Agriculture Unit Ethics Committee (Meeting No: 2025/27, Decision No: 2025/1, Date: November 3, 2025).

Study Location

Data collection was conducted in rural settlements in Sarıkamış and Merkez districts, two prominent districts of Kars province in terms of livestock production. Fieldwork was conducted in 21 randomly selected villages out of 56 in Sarıkamış and 18 villages out of 72 in the Central district.

Data Collection

The data for this study, which examines the general structure and problems of cattle farming enterprises in Kars province, was generated through face-to-face surveys conducted with farmers A total of 244 producers were interviewed through face-to-face surveys, 165 in Sarıkamış and 79 in the Central district. This resulted in a broad and diverse sample representing the research area, and information on the current status of livestock enterprises in the region and producer experiences was obtained directly from the source.

"Sampling and Survey," a widely used scientific method in studies investigating the structural status of livestock enterprises, was employed. In determining the number of farms to be sampled in this study, the "Simple Random Sampling" method was employed to select the surveyed enterprises, as some data were unavailable due to the lack of previous studies of this type in the province (Yamane, 2006).

$$n = N/[1+N(e)^2] \quad (1)$$

N: Number in population, e: Confidence interval, n: Sample size,

Data for this study was obtained through one-on-one interviews with 244 participants selected by chance using the sampling method to represent the population of cattle farmers in Kars province.

Statistic Analysis

The data obtained in this study were analyzed using frequency analysis in MS Excel and SPSS version 21.0 (2020). Statistical significance was evaluated using the Chi-Square (X^2) test (SPSS, 2020).

RESULTS and DISCUSSION

This section evaluates data obtained from a survey conducted on cattle farming enterprises in Kars province. Farmers' profiles were analyzed based on key demographic indicators such as age distribution, number of employees, and education levels. The findings not only reveal the current structure of the cattle farming sector but also aim to provide a broader perspective on general trends in the sector by comparing them with similar studies conducted in different regions.

An examination of the ages of farmers participating in the study conducted in Kars province revealed that 8.6% were between 18 and 25 years old, 27.0% between 26 and 35 years old, 32.0% between 36 and 45 years old, 21.3% between 46 and 55 years old, 10.7% between 56 and 65 years old, and 0.4% of producers aged 66 and over (Table 2). The data revealed that the majority of farmers were middle-aged and older, with a lower interest in farming among younger generations. In a study conducted in the Ödemiş district of İzmir province, Tatar (2019) examined the age groups of cattle breeders and found that 27.1% were between the ages of 36 and 45, while 31.2% were between the ages of 46 and 55. This study and similar studies concluded that production in cattle farms is largely carried out by individuals of middle age and older (Tatar, 2019; Teber, 2019; Özsağlıcak, 2019).

In the study, when asked about the "number of individuals in the enterprise" to the owners of cattle farming enterprises, 25.8% answered 1-3 people, 43.9% answered 4-6 people, and 30.3% answered 7 people or more (Table 2). In his study conducted in the Ödemiş district of İzmir province, Tatar (2019) found that 66.7% of the total number of employees consisted of 4-6 people, 22.9% consisted of 1-3 people, and 10.4% consisted of 7 or more people. In addition, when other similar studies were examined, it was seen that the majority of the number of employees in family farms engaged in livestock farming consisted of 4-6 people (Özsağlıcak, 2019).

In the research, the educational background of the farmers was examined through a survey; it was determined that 0.4% were illiterate, 1.6% were literate, 68.8% were primary school graduates, 4.2% were secondary school graduates, and 25% were high school graduates. It was determined that 99.6% of the farmers surveyed were literate, but none of them had a university degree (Table 2). The study found that more than half of the farmers engaged in cattle farming in Kars province were primary school graduates, while a substantial 25% were high school graduates. Similar studies have also examined the educational background of the farmers, and it was found that 32.7%

had a secondary school degree, 28.4% had a high school degree, and 1.9% had an associate degree (Kaylan 2019). Another study examining the educational background of farmers in Ankara and It was determined that 65,6% farmers in Aksaray and 76% in Ankara were primary school graduates (Koçak, 2020; Sevimli, 2020). A study conducted in Şanlıurfa found that 31.71% of farmers were primary school graduates (Tatar, 2007). When all these studies are considered, it is understood that the majority of livestock producers are not university graduates, and their educational attainment generally remains at the primary or secondary school level.

Table 2. Socio-demographic characteristics of farmers

Variables	**Number**	**Percentage (%)**
Age		
18-25	21	8,6
26-35	66	27,0
36-45	78	32,0
46-55	52	21,3
56-65	26	10,7
66 and above	1	0,4
Number of individuals in the business		
1-3	63	25,8
4-6	107	43,9
7 and above	74	30,3
Level of education		
Illiterate	1	0,4
Literate	4	1,6
Primary school graduate	168	68,8
Middle school graduate	10	4,2
High school graduate	61	25,0
University graduate	0	0
How many years has he/she been doing this job?		
1-5	12	4,9
6-10	52	21,3
11-15	35	14,3
16-20	47	19,3
21-25	35	14,3
26 and above	63	25,9
Why do you do animal husbandry?		
It's inherited from my father, and I don't have another job.	161	66,0
Because I find it profitable	11	4,5
To provide additional income	72	29,5

In the study, cattle farmers who participated in the survey were asked, "Do you find dairy cattle or beef cattle more profitable?" 3.3% of the producers answered dairy cattle, 18.9% beef cattle, and 77.8% said both were equally profitable (Table 3). This result explains why farmers in Kars conduct both beef and dairy cattle operations. A study conducted by Şeker et al. (2015) on cattle farming enterprises in Muş revealed

that 79.2% of 125 farmers engaged in both beef and dairy cattle farming, 9.2% beef cattle, and 11.7% dairy cattle (Şeker et al., 2015). The results of these two studies appear to be consistent with each other. In this study, 99.6% of the farmers surveyed stated that milk prices were low, while only 0.4% reported that they were reasonable. The high level of dissatisfaction with milk prices can be attributed to high input costs. In a study conducted in the Ödemiş district of İzmir province, Tatar (2019) found that concentrate prices were higher than milk prices, indicating the need for improvement in this area.

Table 3. Structural characteristics of farms in Kars region

Variables	**Number**	**Percentage (%)**
Do you find dairy or beef cattle more profitable?		
Dairy cattle	8	3,3
Beef cattle	46	18,9
Both are the same	190	77,8
As a livestock breeder, how do you find the price of milk in relation to the expenses incurred?		
Very low	243	99,6
Reasonable	1	0,4
High	0	0
Do you think you have sufficient knowledge and experience in raising and feeding animals?		
Yes	12	4,9
No	232	95,1
Have you ever attended training or seminars on animal husbandry and animal nutrition?		
Never participated	190	77,9
Participated once	42	17,2
Participated more than once	12	4,9
Do you think you benefited enough from these trainings?		
Yes	23	9,4
No	207	84,8
Not sure	14	5,7
Where do you get information about raising or feeding animals?		
From neighboring growers	213	87,3
From Provincial Directorate of Agriculture technical staff	31	12,7
From universities	0	0
Other	0	0
Would you participate if training on these topics was given more frequently?		
Yes	98	40,2
No	146	59,8

While 95.1% of the participating farmers believed they lacked sufficient knowledge and experience in animal husbandry and nutrition, only 4.9% considered themselves competent in these areas. The proportion of those who did not attend training and seminars in husbandry and nutrition was 79.9%, while 17.2% attended these training sessions once, and 4.9% attended more than once. The proportion of those who felt they did not benefit sufficiently from these training sessions was 84.8%, with 23%

stating that they had benefited, and 5.7% stating they were unsure whether they had benefited from them (Table 3).

As part of the research, farmers participating in the survey were asked, "Where do you get information about animal husbandry or nutrition?" 87.3% of participants stated that they received information from neighboring breeders, while 12.7% reported receiving information from the Provincial and District Directorates of Agriculture (Table 3). Furthermore, 59.8% of participants responded no to the question, "Would you participate if training was offered on these topics?" The primary reason for not participating was that they believed the training was not sufficiently useful (Table 3).

The change in the number of cattle in the enterprises according to the ages of the farmers is examined and presented in Figure 1. The relationship between the age of the farmers and the number of cattle in their farms was found to be statistically significant (X^2=80.35, P=0.0001).

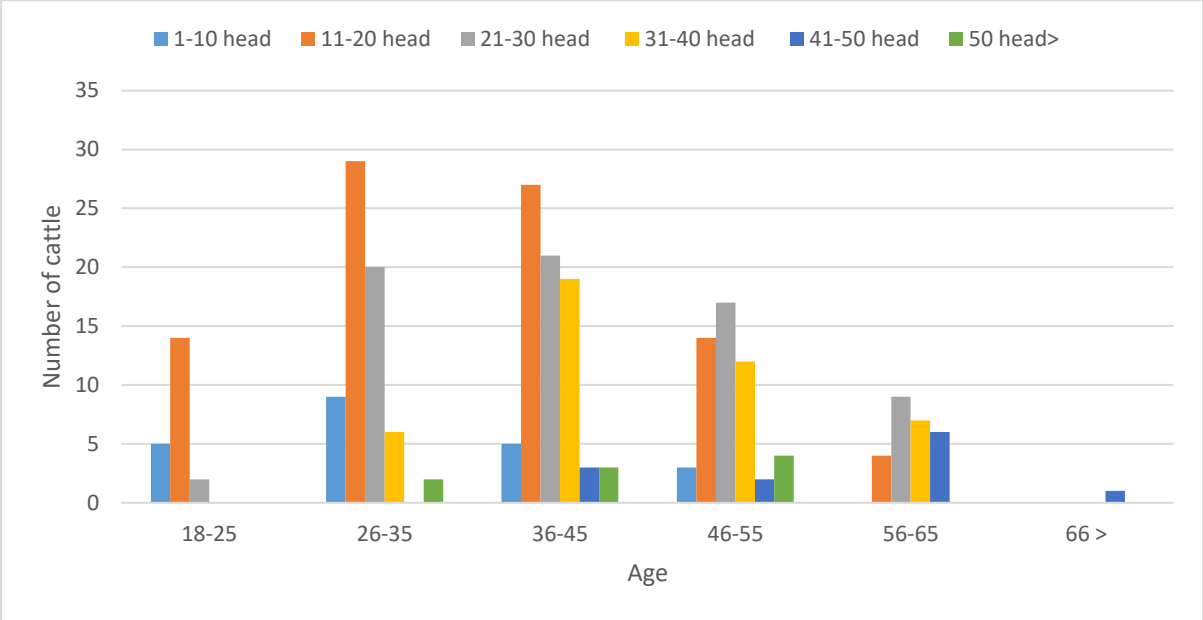

Figure 1. Change in the number of cattle in enterprises according to the age of the enterprise owners (X^2=80.35, P=0.0001**)

The survey found that the vast majority of farmers between the ages of 18-25 own 11-20 heads of cattle. Of the farmers participating in the survey, 29 farmers between the ages of 26-35 owned 11-20 heads of cattle, six farmers between the ages of 26-35 owned 31-40 heads of cattle, and two farmers between the ages of 50 or more (Figure 1). While 27 producers between the ages of 36-45 owned 11-20 head of cattle, only six farmers owned 41 or more head of cattle. Of the farmers between the ages of 36-45, 19 businesses were found to own 31-40 heads of cattle. The study found that among 52 enterprises surveyed between the ages of 46-55, 3 enterprises had 1-10 head of cattle,

14 enterprises had 11-20 head of cattle, 17 enterprises had 21-30 head of cattle, 12 enterprises had 31-40 head of cattle, 2 enterprises had 41-50 head of cattle, and 4 enterprises had 4 head of cattle. Among the farmers between the ages of 56-65, 4 enterprises had 11-20 heads of cattle, 9 enterprises had 21-30 head of cattle, 7 enterprises had 31-41 head of cattle, and 6 enterprises had 41-50 head of cattle (Figure 1). The study also revealed that one enterprise surveyed with individuals over the age of 66 had 41-50 heads of cattle. In this study, when the relationship between the ages of the farmers and their cattle assets was examined in general, it was determined that 67.4% of the farmers in the middle age group (26-45) owned 11-30 heads of cattle (Figure 1).

The study determined that the relationship between the ages of the farmers and the reasons for their livestock farming activities was statistically significant (X^2=26.413, P=0.003).

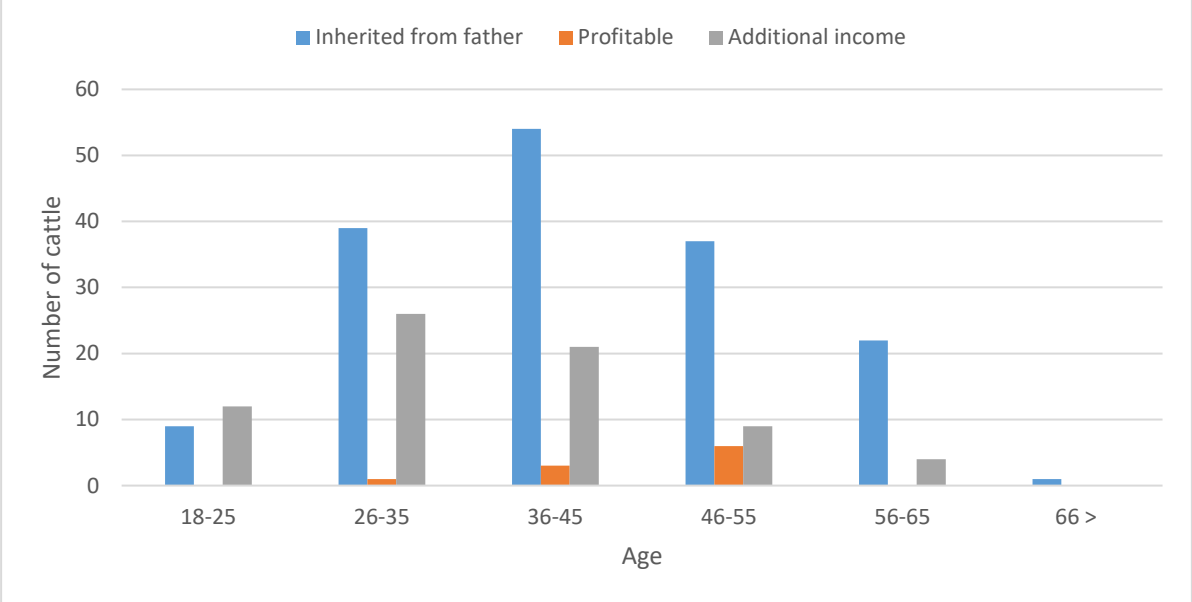

Figure 2. Change in reasons for livestock farming according to the age of farmers (X^2=26.413, P=0.003**)

Nine of the 18-25 age group participants in the survey stated that they engaged in livestock farming because it was a profession inherited from their fathers, while 12 stated that they engaged in livestock farming to supplement their income. A general look at the graph reveals that the percentage of farmers who engaged in livestock farming because it was their father's profession began to increase in the 18-25 age group, reaching a peak between the ages of 36-45 and then declining. Farmers who found livestock farming profitable (a total of 10 farmers) were concentrated in the 46-55 age group, while none were found profitable in the 18-25, 56-65, or over 65 age groups. It is understood that 72 of the farmers who participated in the survey who

reported livestock farming to supplement their income also engaged in other activities. 62.5% of these producers were in the middle age group (26-45) (Figure 2).

CONCLUSION and RECOMMENDATIONS

This study was conducted to reveal the socio-demographic structure, production activities, and perceptions of the sector among cattle producers in Kars province. The findings reveal that cattle raising is the primary source of income in the region and is often carried on as a father's profession. A significant portion of farmers are middle-aged, and young people appear to have limited interest in the sector. Furthermore, it was determined that the vast majority of farmers are primary school graduates, and that individuals with university degrees are not involved in the sector. A lack of knowledge about animal husbandry and nutrition is widespread; although most farmers stated that they lack sufficient knowledge in these areas, participation in training activities was found to be quite low.

Statistical analyses revealed that the age groups of farmers are significantly related to both the number of animals on their farms and the reasons for their livestock farming activities. In particular, the majority of farmers aged 26–45 own 11–30 head of livestock, and this group also maintains livestock farming for supplementary income. However, the vast majority of producers complain about inadequate milk prices, posing a significant threat to sustainable production.

In conclusion, while the traditional structure of cattle farming in Kars province is strong, policies need to be developed to increase the knowledge of farmers in the sector, attract young people to the sector, and improve economic conditions. In this regard, increasing local publication activities, expanding participatory training programs, and reviewing incentives for farmers are crucial.

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Conflict of Interest

The authors have declared that there are no competing interests.

Authors' Contributions

NE contributed to the project idea, study design, and execution. NA conducted the surveys. NE and NA jointly wrote the manuscript.

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