

SOCIO-ECONOMIC DIMENSIONS OF CAMEL BREEDING AND CAMEL WRESTLING IN TURKEY

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ABSTRACT

This study was conducted to examine the socio-economic dimensions of the camel breeding done for camel wrestling which has been on-going as a family tradition from the periods when nomadism was performed widely to present times. Data were obtained from the survey study conducted in 2020 with 56 camel breeders who were selected by random sampling. Most of the participants dealt with camel breeding because of the tradition/habit handed down from the family (78.6%) and 21.4% of them were involved in camel wrestling. Breeders fed their camels an average of 11 kg of roughage and 5 kg of concentrate feed daily and the average annual feed cost was \$ 924. About 23.2% of the participants fed their camels with additional feeds 7 days before wrestling events. Those breeders having more camels incurred an extra average cost of \$ 430 labour (savran) per month. Camel wrestling, led to soft tissue injuries in the face and in some body parts, leading the foot problems, and breeders had to spend average annual cost of \$ 125 for veterinary care and medicine. The results of the survey were evaluated in terms of the health of camels and it was determined that there is a shortage of veterinarians specialised in camel breeding and in the treatment of common diseases and injuries in camels.

Key words: Breeding, camel, Turkey, wrestling

Camel is a multi-purpose animal and is bred for many purposes, such as milk, meat, wool production, cargo transportation, tourism, agricultural activities and races (Koyuncu and Yılmaz, 2019; Yılmaz *et al*, 2011). Camels are also bred for races in such countries as Arab Emirates, Tunisia, Sudan, Kenya, India and Egypt, for fights in Afghanistan and Pakistan, and for the camel wrestling in particularly the western regions of Turkey (Atasoy and Ozbaser, 2014). Although, the start date of camel wrestling in Anatolia is not precisely known, it is believed that it started in the Aegean Region in the 1800s (Atasoy and Ozbaser, 2014; Caliskan, 2013). Camel-wrestling has been organised and bear a cultural and touristic importance. Unlike other sports, it is performed in a festival together with music, folk dances and with special rituals according to traditions and customs. Thus camel wrestling is considered as a socio-cultural activity (Culha, 2008).

The aim of this study was therefore to determine the socio-economic status of the breeders raising camels for camel wrestling.

Materials and Methods

The data about camel breeding and the economic dimension of camel wrestling was collected from surveys with 57 camel breeders in camel wrestling events organised in the Aegean Region (in Aydın, Afyonkarahisar, İzmir, Denizli, Kutahya, Manisa, Muğla and Uşak) between September-2019 and February-2020. SPSS 16 package program was used to analyse the obtained data. In the study, 'chi-square' and 't test' were also used to reveal the relationship between categorical variables.

Results and Discussion

The education level of the breeders was primary school (41.1%), middle school (12.5%), high school (35.7%), and university level (10.71%). In the study, 35.7% of the participants were determined to be the members of a union or cooperative and while 10% of them are members of a cooperative/union not related with camel breeding, 35% of them were members of the Federation of Camel Breeding Culture and Camel Wrestling, and remaining were members of Camel Breeders' Associations

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(Table 1). There was no statistical relation between the education levels of the breeders and their membership to any organisation; however, the higher the education level, the more membership to any organisation ($p>0.05$) was seen.

Table 1. The relation of the education levels of the participant camel breeders to their membership to any cooperative/union.

Education levels	Membership to any cooperative/union		Total
	Yes	No	
Primary school	6	17	23 (41.1%)
Middle school	2	5	7 (12.5%)
High school	9	11	20 (35.7%)
University	3	3	6 (10.7%)
Total	20 (35.7%)	36 (64.3%)	56 (10.71%)

$\chi^2 = 2,369$ $p>0,05$

It was revealed that out of 56 breeders only 48.2% (27) bred camels and the rest 51.8% bred cattle.

It was revealed that they had this occupation since 20.65 years as an average (min1, max 64) and that they breed 3.86 head camels (min 1, max 17); however, they only participated into wrestling with only 2.57 head of them (min 1, max 10) (Table 2). Breeders having a membership to a cooperative were younger than those not having a membership and that they breed approximately 1 camel more. It was found that 78.6% of the participants did camel breeding as

a family tradition, while 21.4% were doing that for camel wrestling.

Approximately 45% of the breeders were of the opinion that camel breeding was not difficult. However, around 25% feel that camels are too hard to many when females are in their oestrus periods.

It was found that they gave an average of 11 kg of roughage per camel and 5 kg of concentrate (Table 3). Camel breeders give an average of 5.5 tons of feed per year to a single camel. It was seen that camel breeders generally prefer straw and crushed barley in the first place and then they prefer cereals mixed with alfalfa, vetch, barley or oat. About 23.2% of camel breeders also feed their camels before camel wrestling. It was determined that breeders give an average of 5 kg of additional feed (usually barley) to per animal daily, with an average of 7 days (min: 2, Max: 10) before wrestling. The camel breeders generally prefer straw and crushed barley in the first place. In a study, Koyuncu and Yilmaz (2019) reported that camels converted low-quality feeds into higher yields than other farm animals due to their digestive physiology, and thus being more economical.

As a result of the evaluations made with the t test in line with the data obtained, although there was no statistically significant difference between the income earned by the producers from wrestling and additional feeding before wrestling ($p = 0.115$ $p> 0.05$),

Table 2. Some information about the camel breeders.

Some information	Member of the cooperative	Mean	Std. Error	P Value
Experience time in camel breeding	Evet	16.50	2.401	P=0.09
	Hayır	22.03	2.659	p>0.05
The number of camels in farm	Evet	4.25	0.914	P=0.39
	Hayır	3.64	0.510	p>0.05
Number of wrestling camels in farm	Evet	2.95	0.394	P=0.89
	Hayır	2.36	0.319	p>0.05
Experience time in camel wrestling	Evet	15.75	2.585	P=0.99
	Hayır	19.61	2.109	p>0.05

Table 3. Preference of dry grass and concentrate feeds.

Dry grass	n	Order of preference	Concentrate feeds	n	Order of preference	Additional Feeding	n	Per cent
Hay	50	1	Barley meal	47	1	Barley	4	30.8
Clover	48	2	Mix cereal	15	2	Barley Vetch	3	23.1
Vetch	43	3	Wheat meal	14	3	Barley Vetch Oat	4	30.8
Barley Oat	35	4	Factory feed	8	4	Barley Vetch Wheat	2	15.3
Meadow grass	4	5	Diğer	7	5	Total	13	100

Table 4. Economic dimension of camel wrestling (\$).

Income / Expense Items (\$)*	Minimum	Maximum	Mean	Std. Deviation
Income from wrestling	75,0	1.800	400,3	335,9
The sale price of a wrestler camel	8.555	30.000	11.763,8	5.656,6
Annual feed cost	250,0	1.667,03	924,7	432,1
Monthly labour cost	250,0	833,3	430,0	241,2
Participation costs	83,3	83,3	83,3	0,00
Transport cost	17,0	150,0	40,0	21,5
Veterinary medicine cost	20,0	330,0	125,0	114,9

• 1 \$=6,00 TL

the average income of those who feed the camel before wrestling with additional feed was \$ 574. 94 ± 191.64 , and those who did not feed with additional feed had an average income of \$ 391.06 ± 62.62 (Table 4).

The breeders earned an average of \$ 400 if their camels won wrestling. However, if the camel is a champion, the price of the camel increases and becomes important income.

The most important cost item in camel breeding is feed and this expense is determined to be an average of \$ 924 per camel per year. The study revealed that those who fed 5 or more camels (17.85%) with hired workers, it incurs an average of \$ 430 per month of labour (Savran) expenses. The participation, transportation and accommodation expenses of champion camels in particular were paid by the Wrestling Organising Committee (WOC). In the interviews, it was determined that 32.1% of those participating in camel wrestling were paid by the same committee in addition, 4 people were given an average of \$ 1.167 (min: 850, max: 2,000) decoration costs.

That although, it varies according to the injuries, there is an average of \$ 125 per year veterinary medicine and medication expenses (Table 5).

In the study, some injuries were seen in the camels of 28.6% of the participants. The most frequent injuries in wrestling are given in table 5.

Table 5. Types of injuries to wrestling.

Injuries	Frequency*	Per cent
Foot problems (nail dislocation, lameness etc.)	10	41.7
Injuries in the head area (lip splits, nosebleeds etc.)	8	33.3
Other soft tissue injuries	6	25.0
Total	24	100.0

* It is stated that the grower can make more than 1 choice.

According to (Turkish Statistical Institute) (TÜİK, 2020) data, the presence of camels in Turkey,

which was 865 heads in 2004, increased over the years and reached to 1.651 heads in 2019. In 2019, 29.68% of the camel presence in Turkey was in Aydın province, 16.05% of it was in İzmir, 14,72% in Canakkale, 10.36% in Antalya and 9.87% in Muğla. According to TÜİK data, a great majority of the camels bred in totally 17 provinces in Turkey are bred so as to use them as cargo animals and in camel wrestling events and for tourism (Yılmaz *et al*, 2018).

With the increase in the number of camels, in the number of camel breeders and in camel wrestling, two federations were established in 2012 in Aydın and İzmir in Turkey. About 36% of the breeders were members of any cooperative or association and the participants were generally members of the Camel Breeders Association.

The participants have been participating in camel wrestling for 21 years on average and 78.6% were doing camel breeding as a tradition of family. Caliskan (2013) also found that a significant majority of wrestler camel owners (61.6%) did camel breeding as a family tradition.

In the study, it was determined that the participants carried out camel wrestling as socio-cultural activity, tradition, and advertisement-recognition. Similarly to the result of present study, Sanlı (2019) also reported the similar reasons for participation into the wrestling. Caliskan (2013) reported that the breeders participated in camel wrestling as family tradition and hobby purposes.

Approximately 40% of the breeders reported that camel care was not difficult and 25% found it difficult to manage especially during oestrus periods. However, the difficulties of the transportation process and the expenses to participate in a camel wrestling were also expressed. Delayed sexual maturity period, late in terms of milk production and the inability to determine oestrus period were also expressed as other difficulties by the breeders.

Almost all of the breeders were from the countryside and had financial constraints and left that their participation in camel wrestling was mandatory and incurred a significant cost. The maintenance-feeding of the camels, the worker (saver) fee, the transportation fee to participate into the wrestling, the equipment-accessory costs, and the accommodation during the wrestling involve additional cost (Yılmaz and Ertugrul, 2015).

In present study, it was opined that there were breeders participating into the wrestling to sustain their tradition in a socio-cultural activity and for hobby purposes even though their financial means were not sufficient to meet out the participation fees, the transportation and accommodation expenses. Only the 32.1% of them were paid by the associations and/or the municipalities organising the wrestling. Other breeders were found to have participation and transportation costs between \$ 100- \$ 200. The saddle dressing and decoration called "Camel's Packsaddle" consisting of colourful accessories made of sackcloth on the back of the camel, costs an average of \$ 1.167 (min: 850, max: 2.000) and 4 participants of the survey felt that saddle dressing is also another expense item. Similarly, Culha (2008) reported that the money spent for these accessories varied between 1.000 TL and 10.000 TL.

Although, the transportation costs arising from the transport of camels in wrestling vary, it was determined in this study that they ranged between \$ 17 and \$ 150. In line with this study finding, Yılmaz *et al* (2018) reported that the transportation cost varies depending on the camel's reputation and the distance to be travelled. It was also determined that the transportation and participation fees of champion camels were paid by the Wrestling Organising Committee (WOC) (Yılmaz *et al*, 2018).

Camels are generally cared for by family members. However, some of the breeders (17.9%) having high number of camels pay some caregivers called as "savran" who are experts in the care and education of camels. Although, the amount varies depending on the number of camels, the pay is usually around \$ 430 per month. In this regard, the findings of the study are in parallel with the findings of Caliskan (2009).

In the study, it was determined that the breeders earned an average of \$ 400 income, depending on the size of the organisation, if their camels won wrestling. This income was insufficient in meeting out the annual expense of the breeders.

However, it was determined that the price of the camel rises to \$ 12.000 in average if the camel becomes the champion and provided a significant income for the breeder. As a matter of fact, although camel breeding and participation in wrestling were very expensive, the breeders attended these organisations especially, for the purpose of recognition and advertisement in the community. However, it was determined that many camel breeders could not participate in many organisations due to the insufficient financial situation. Therefore, if the wrestling organisers do not receive transportation and participation fees from these breeders, it can be said that the number of camels participating in camel wrestling will increase. In general, an average of 50 or 55 pairs of camels wrestle in camel wrestling festivals depending on the size of the organisations (Culha, 2008).

Camel wrestling is not only important organisations for camel breeders. On the contrary, it is intertwined with many subsidiary sectors such as camel feed, equipment, various accessories and ornaments, food and beverage and accommodation. Together with these elements, it should be seen as an important sector in the revival of the economy in the region and creating employment in the winter months (Yılmaz and Ertugrul, 2015). The wrestling events, organised particularly in November and March, are conducted by municipalities and the income provided is spent for some charities like school, mosque and bridge constructions. The awards are great in the organisations held in December and February and are organised by the Federation of Camel Breeding Culture and Camel Wrestling (DEGUF) and Camel Breeders' Associations. It was stated that state support was insufficient in camel wrestling. Caliskan (2009) reported that wrestling could hardly be financed in many regions and wrestling organisations could not perform wrestling events regularly every year due to financial problems. It was also stated in the same study that this problem seriously threatened the future of camel wrestling, so the state should support these organisations. Sanlı (2019), in a study stated that the nomadic lifestyle is appreciated in desert festival (desert camel races) held in the United Arab Emirates. He also added that the region's economy was contributed greatly with the participation of thousands of camels for high money awards.

Another problematic result that occurs in camel wrestling is the injuries that occurred during the wrestling of animals. Yılmaz and Ertugrul (2015)

reported in their studies that foot problems occurred and camels limped, especially when camels older than 20 years old are wrestled. In the wrestling events organised in Turkey, injuries of the camels are reduced by putting on camel saddle (havut) and net muzzle on mouth. Injuries were generally related with soft tissue injuries. The camel breeders have to spend \$ 125 towards veterinary-drug costs. In line with the findings of Yılmaz and Ertugrul (2015), it was concluded that there is a shortage of specialised veterinarians in camel breeding, disease prevention and treatment.

Camel wrestling held in western Anatolia should be considered as an important opportunity in terms of job opportunities and local economy and rural development for the people in the region.

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