Bulgarian Journal of Agricultural Science, 25 (No 4) 2019, 661–667

Professionalism in extensive sheep farming system in Central Greece

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Abstract

Yiakoulaki, M., & Hasanagas, N. (2019). Professionalism in extensive sheep farming system in Central Greece. *Bulgarian Journal of Agricultural Science, 25*(4), *661–667*

Aim of this paper is to explore determinants and conditions of professionalism in extensive sheep breeding system. Professionalism is here defined as considering extensive sheep breeding as a "main occupation" according to the self-assessment of breeders. The study was conducted in Central Greece using in-depth interviews and standardized questionnaires answered by the whole population of sheep breeders (N = 60). The data was processed by using Kendall test ($P \leq 0.05$). It has been found that professionalism is related to the location of stables outside the residential areas (-0.409), the milk-based income (0.216), the annual duration of milk production (0.277) and the existence of milk storage system (0.272). Personal characteristics of sheep breeders, structural features of the holding, usage of forage resources, feedstuffs and grasslands' infrastructure are not strong determinants of professionalism. The *novelty* of the content consists in the exploration of professionalism as a self-perception of the breeders, which is considered to be more authentic than any arbitrary definition of professionalism and the *new information* provided by this research lies in pointing out that the breeders' perception of professionalism can be characterized as superficial and entrepreneurially unsustainable, because it is related with the production output and not with deep-rooted prerequisites like structure and conditions. Policy instruments for strengthening professionalism are suggested.

Keywords: main occupation; sheep; milk production; structural features

Introduction

Sheep breeding is a major activity in the animal production sector in Greece with considerable social, economic and environmental importance (Zervas et al., 1996; de Rancourt et al., 2006; Aggelopoulos et al., 2009). About 9 million animals belonging to 127937 holdings (NSSG, 2009) are raised for both milk and meat production. They are distributed all over the country (Aggelopoulos et al., 2009) and are well adapted to use the marginal and mountainous areas (Zervas et al., 1996). The majority of these animals (85%) graze extensively on the communal grasslands. This means that each farmer who owns domestic animals can freely utilize the grasslands that are allocated to the village where he resides. The farmers often cooperate with each other to arrange the common utilization of grasslands, without being substantially coordinated by local authorities. However, the grasslands can provide forage to grazing animals for a limited period of the year (6-7 months). For this reason, alternative forage resources, such as temporary pastures of annual winter cereals during early spring and cereal stubble fields after crop harvesting during summer-early autumn are also used (Yiakoulaki et al., 2003). Additionally, the breeders in order to increase milk production use purchased feedstuffs (roughages or concentrates). This practice subsequently leads into increase of production cost and constitutes a competitive disadvantage in maintaining sheep breeding in the less favored areas (Kitsopanidis et al., 2009; Aggelopoulos et al., 2009).

Considering the afore-mentioned conditions, entrepreneurial and operational parameters at extensive sheep breeding holdings seem to be of critical importance for the cost-effective use of the forage resources and capital investment. In everyday practice, professionalism can be regarded as a key concept in analysing sustainability and management issues of extensive sheep breeding system. Professionalism is normally an abstract concept and its empirical examination on the basis of an operational and acceptable definition is still a research challenge. Generally, in farming the issue of professionalism has been discussed from various points of view. For example, it has been considered in the context of responding to norms and following strategies (Schoorl & Holt, 1990); it has been perceived as a notion related to technology transfer and evaluation (Ison & Ampt, 1992) or to confront with complex development-related and evaluation challenges (Smith, 1987). Particularly in livestock breeding, the market and technical efficiency (Tsourgiannis et al., 2008), the consulting on welfare and animal health (Roger, 2012) as well as the capability of harmonizing ethics with productivity using specific knowledge (Farquharson, 2009; Jochemsen, 2013) have been more or less explicitly connected with several dimensions of professionalism. Moreover, innovativeness, entrepreneurial orientation and efficiency, learning, research and extension services seem to be related with concepts which could be characterized as professionalism and have been insightfully explored (Alarcon & Sanchez, 2013; Ramos-Sandoval et al., 2016). In several studies multi-family entrepreneurial structures (Sippel 2016), investment in stable capital (equipment, buildings, irrigation) and farm size (Gottlieb et al., 2015) as well as training, use of advisory services, and willingness to invest in human capital and knowledge (Terres et al., 2015) are also related to professionalism. Recently, the concept of professionalism on the occasion of extensive buffalo breeders has been operationalized by Tsiobani et al. (2013) as one-dimensional variable, particularly as perception of buffalo breeding as main occupation or not. In other words, it was a self-assessment of each breeder, whether he perceives himself to deal with breeding seriously enough to regard it as his main occupation. This one-dimensional perceptual approach to professionalism was adopted by the above cited authors as an acceptable and operational definition of professionalism, because any other approach to this notion, such as social, technical or economic (Paddock, 1986) could be characterized as inadequate or arbitrary. For example, one could consider as professionalism the reliability to the clients or the social accountability while someone else can call professionalism the high investment in the holding even without social accountability or the training and the effectiveness of even restricted resources or the familiarity with new technology without needing a long time for training or the extension of entrepreneurial activity, etc. This one-dimensional definition appeared, indeed, to be only partially correlated with such variables, i.e. it was positively correlated with the number of family employees but not with the number of animals while it was negatively correlated with extension to commercial or not correlated at all with agricultural activity (Tsiobani et al., 2013). This notion of professionalism has not been examined in the sense of sheep breeders' profile and practices according to our knowledge.

The aim of this study is the empirical exploration of professionalism in an extensive sheep breeding system that practiced in an area characterized by long tradition in this activity. The expected academic added value of this analysis lies in the understanding of the perception of professionalism, as its relation to personal, entrepreneurial and technical/infrastructural variables will be examined. Namely, the possible correlation of a perceptual variable like professionalism with personal values as well as physical/objective variables (e.g. animal production, infrastructure, etc.) will be examined. The expected practical added value lies in providing information of importance for rationalizing the practices used in extensive sheep breeding in future development programs.

Specifically, the following questions will be discussed:

1. To what extent the notion of professionalism (operationalized as the self-assessment of "main occupation" or not) is related or not to personal and structural characteristics of the holdings

2. To what extent the notion of professionalism is related or not to characteristics of extensive sheep breeding system (e.g. utilization of natural resources, supplementation of feedstuffs), animal production and grassland infrastructure.

Materials and Methods

Experimental area

This study was conducted in the six districts of Kilada municipality (Amigdalea, Eleftheres, Kilada, Koutsochero, Loutro and Rachoula), Larissa in central Greece. The area has been selected because extensive sheep farming has a long-term tradition and is of great socio-economic importance for the rural community. Additionally, the local environmental conditions are suitable for practicing extensive sheep breeding as topography varies from flat areas occupied by arable lands to hills covered by natural vegetation (mainly herbaceous species).

Measurements

This study was based on the collection of primary data through in-depth interviews and standardized questionnaires

with all sheep breeders (N = 60) of the six districts of Kilada municipality. The questions focused on the profile of the breeders (gender, age, interest in agricultural training) and their holdings (structural characteristics), the characteristics of the breeding system (utilization of natural resources, supplementation of feedstuffs), the production characteristics of the breeding system and the existence of infrastructure on grasslands.

As explained above, in this study, professionalism has been operationalized on the basis of the one-dimensional definition. Thus, its measurement has been conducted considering sheep breeding as "main occupation" according to the self-assessment of the sheep breeders. This way of theorization provides the theoretical advantage of unambiguity, and constitutes a way of advantageous operationalization; measuring this concept only on the basis of this self-assessment criterion and not through multiple criteria produces clear results on how the concept of "main occupation" is perceived by the interviewees.

Statistical analysis

Data was processed through bivariate analysis (Bryman, 2012) which enables overview on the whole possible relations. Specifically, the Kendall test was applied in order to approach normality and homogeneity. The significance level was predetermined at $P \leq 0.05$. All statistical analyses were performed with SPSS v.20 software (SPSS Inc., Ill: Chicago, USA).

Results and Discussion

Results

According to Table 1, no personal characteristics of the breeders (age, gender, interest in agricultural training concerning rational entrepreneurship, animal hygiene and welfare as well as grassland management and improvement, and environmental awareness) seem to be significantly correlated with professionalism. The same stands for structural features of their holding: family vs. individual character of the enterprise, number of family and non-family employees, size and synthesis of animal capital, existence of milk-productive or improved sheep breeds as well as pluriactivity (namely simultaneous exercising agriculture and/or goat husbandry).

In Table 2, the existence of stables outside residential areas (-0.409), the existence of milk storage system (0.272), the duration of milk production (0.277) and the total income of the milk sale (0.216) seem to influence the perception of sheep breeding as a main occupation. Variables such as usage of forage resources (grasslands, temporary pastures and stubble fields) and feedstuffs, as well as the milking tech-

Table 1. Correlation of personal characteristics of sheep breeders and structural features of their holdings with professionalism

		Sheep breeders' professionalism	
		Kendall coefficient	Significance level
Personal characteristics	Gender (male = 0, female = 1)	-.011	.932
	Age (27-80)	-.035	.750
	Interestedness in Agricultural Training (in issues of rational entrepreneurship) (no = 0, yes = 1)	.029	.823
	Interestedness in Agricultural Training (in issues of animal hygiene and welfare) (no = 0, yes = 1)	.135	.301
	Interestedness in Agricultural Training (in issues of management and improvement) (no = 0, yes = 1)	.059	.651
	Interestedness in Agricultural Training (in issues of environmental awareness) (no = 0, yes = 1)	.022	.867
Structural characteristics of the holding	Family holding (no = 0, yes = 1)	-.047	.717
	Individual holding (no = 0, yes = 1)	.051	.696
	Number of family employees (1-5)	.087	.469
	Number of non-family employees (0-3)	-.150	.234
	Number of sheep (20-650)	.198	.068
	Number of goats bred simultaneously with sheep (0-350)	.040	.748
	Keeping milk-productive sheep breeds (Chiotico) (no = 0, yes = 1)	.119	.304
	Keeping cross-bred sheep (no = 0, yes = 1)	.025	.845
	Developing pluriactivity (simultaneous exercising agriculture and/or goat breeding) (1-2 activities)	.033	.802

Table 2. Correlations of sheep breeding system characteristics, of production and of existing grasslands infrastructure with professionalism

		Sheep breeders' professionalism	
		Kendall coefficient	Significance Level
Characteristics of breeding system	Grazing on communal grasslands (no = 0, yes = 1)	.059	.651
	Establishing of temporary pastures (no = 0, yes = 1)	-.055	.671
	Seasonal grazing of crop residues (no = 0, yes = 1)	-.010	.936
	Providing of roughage feedstuffs (no = 0, yes = 1)	.135	.301
	Providing of concentrate feedstuffs (no = 0, yes = 1)	-.081	.503
	Daily distance travel of sheep during grazing (0-12 km)	.063	.563
	Avoiding grazing when snowing (no = 0, yes = 1)	.059	.651
	Avoiding grazing when raining (no = 0, yes = 1)	.003	.979
	Existence of stables in residential area (no = 0, yes = 1)	-.409(**)	.002
	Manual milking (no = 0, yes = 1)	.111	.393
	Mechanized milking (no = 0, yes = 1)	-.168	.197
	Existence of milk storage system (no = 0, yes = 1)	.272(*)	.037
Production characteristics	Milk produced annually per animal (80-250 kg)	-.029	.799
	Duration of milk production (2-9 month)	.277(*)	.021
	Milk income annually (0-116000 Euro)	.216(*)	.046
	Using milk for cheese production (no = 0, yes = 1)	-.126	.333
	Using milk for yogurt production (no = 0, yes = 1)	.044	.736
	Developing milk retail (no = 0, yes = 1)	.191	.142
Grassland infrastructure	Existence of road networking (no = 0, yes = 1)	.059	.651
	Existence of animal watering point system (no = 0, yes = 1)	.059	.651
	Existence of shelters for animals and shepherds (no = 0, yes = 1)	.233	.073

nique are not strong determinants of professionalism. Also, the existence of infrastructure on the grasslands (road networking, watering point system and shelters for animals and shepherds) does not seem to enhance professionalism.

Discussion

Personal and structural characteristics

It is noticeable that both genders may equally perceive sheep breeding as a main occupation. Usually, an animal breeder is assumed to be either genderless or male (Sinn & Wahyuni, 1996). This is understandable because of the hard working conditions in stables or during flock pasturing. The results of this study indicate that extensive sheep breeding is not a gender-specific occupation.

Sheep breeders are relatively old (the average age amounts to 56.4 years, varying from 27 to 80 years) in comparison with a previous study (Hadjigeorgiou et al., 1999) which reports average age of 50 years old. This shows a reluctance of the younger generation to follow the specific profession, due to hard working conditions and the negative social status characterizing it. However, the age of sheep breeders seems not to influence the consideration of their occupation as main or not, though it would be expected that a breeder would consider his occupation as main over the years, particularly in an area characterized by long tradition in livestock breeding. Such an indifferent attitude of older breeders towards the acquisition of professional identity can also be understood by the fact that often there are no family successors to continue the activity, as argued by Hadjigeorgiou et al. (1999) or changes in European Union agricultural policy to support this sector and retain the younger generations in the farms. In contrast to our results the tendency of sheep farmers to prepare the succession in the holding has been suggested as a feature of professionalism (O'Rourke et al., 2012).

Professionalism also appears to be insignificant to interestedness in Agricultural Training, concerning issues of rational entrepreneurship, grasslands management and improvement, environmental awareness and even issues of animal hygiene and welfare, which are directly relevant to the viability of the holding. This reveals that extensive sheep breeding has dominated as a disseminated practice rather

than as an organized professional activity, which should be continuously re-standardized following the dynamics of the local and international market conditions and new technologies. Accordingly, the sheep breeders present a susceptibility to maintaining individual professional practice, either based on really substantial experience or on habits and traditions.

The finding of the previous mentioned study of Tsiobani et al. (2013) that a family holding with a long tradition on buffalo breeding enhances professionalism in contrast to an individual holding is not confirmed in this study. Moreover, professionalism does not appear to depend on the number of employees (family or non-family ones). In other words sheep breeders who consider sheep breeding as a secondary occupation may surprisingly occupy more employees than sheep breeders who consider their occupation as a main one. On the contrary, the use of part-time employees or the employment of more family members on the farm have been suggested by Raggi et al. (2013) as dimensions or features connected with professionalism. In our study, the synthesis and the size of animal capital or its characteristics (introduction of cross-bred or selected milk-productive autochthonous Greek sheep breeds, such as "Chiotico") appear to be also insignificant to professionalism. From a neutral point of view, this attitude of breeders could be characterized as a subjectively determined entrepreneurial pattern which is not in accordance with the dominant sense of rationality. However, from a normative point of view, one could criticize it as professional unawareness or unreliable manner.

Moreover, the sheep breeding as a main occupation does not show any negative and strong correlations with pluriactivity. This does not support the findings of Tsiobani et al. (2013) in which professionalism is strongly incompatible with developing other activities.

Characteristics of breeding systems, production and infrastructural variables

Various characteristics of a sheep breeding system appear to be independent from professionalism (Table 2). Specifically, there is no correlation of professionalism with the communal use of grasslands, the establishing of temporary pastures for early spring grazing or the use of crop residues for summer – early autumn grazing. Not even the administration of purchased feedstuffs from the market is correlated with professionalism. It could be expected that the more professional sheep breeders would have been oriented to more specific feeding practices (either semi-intensive ones by providing more feedstuffs or extensive ones by increasing feeding dependency on natural resources). However, this is not the case; no specific strategy appears to be followed. The entrepreneurial behaviour of the sheep breeders is once again characterized by incidental and occasional options. Moreover, professionalism for these breeders does not relate to the willingness to lead their flocks for grazing under bad weather conditions, such as snow or rain, or to lead them to grasslands at longer distances in order to search for feed of better quantity and quality and satisfy their nutrient requirements. The modernization of the holding in terms of milking technology (mechanized vs. manual milking) is also not correlated with professionalism. Thus, professionalism appears to be independent both of breeding practices and techniques, which are supposed to be of importance for the viability and competitiveness of the holding. Thus, the traditional pattern of extensive sheep breeding systems proves stronger than characteristics of professionalism that are related to adaptability, hard working conditions or modernization of the holding as supported by the previous findings of other researchers (Tsiboukas & Tsoukalas, 1999; De Rancourt et al., 2006).

The amount of produced milk (animal/year) is also not related to professionalism. This is also in accordance to results of Table 1, as professionalism appears to be independent of the milk production characteristics of the raised breeds. Additionally, the professional breeders do not seem to have developed a wider production plan, which could include e.g. milk retail, cheese or yogurt production. Such a plan would be expected in the case of the breeders who exercise sheep breeding as main occupation, as it would make their holding more capable of entrepreneurial extension and independent of the industry or the wholesale enterprises. However, this is not the case in our study, showing once again an individualized character of professionalism driven by occasional and short-range options.

The existence of infrastructure in the communal used grasslands, such as road network, water point system and shelters for the animals and the shepherds, also does not enhance the perception of sheep breeding as the main occupation. This is quite peculiar as supposedly road networks facilitate the breeders' and animals' movements to grasslands and the rapid transport of the produced milk to the milk industries. The existence of watering points and shelters for the animals should also be important, as the high temperatures during summer affect the grazing time of sheep and their daily movements (Loridas et al., 2011; Karasabbidis et al., 2014). However, this is not supported once again. The influence of infrastructure on professionalism and subsequently its necessity is not self-evident.

On the contrary, it seems that the location of stables is relevant to the perception of sheep breeding as the main occupation. In this regard, it is imposed by the legislation that stables should be located outside the residential areas. Thus,

breeders with such stables fulfil the legal requirements for having an operating license. In this way, they also create the necessary conditions in order to receive subventions. Thereby, they are more likely to have a professionalism feeling and to perceive their occupation as a main one. Additionally, the existence of a milk storage system, the annual duration of milk production (not the productivity per animal) and the total annual milk income seem also to be significant for building the self-assessment of professionalism and to perceive their occupation as a main one. This is understandable as follows: the duration of milking throughout the year builds the impression (even a superficial one) that they are steadily occupied with sheep breeding as a physical object. This leads up to the creation of (a self-impression of) professionalism, independently of issues of productivity or competitiveness. Under these conditions, a storage system is also necessary in order to be able to preserve the milk produced before its sale to milk industries. Subsequently, the total income produced by this activity as a final outcome is further conducive to the building of a superficial professionalism feeling, independently again of the existence of prerequisites which make it viable (rational entrepreneurial structure, planning, appropriate practices or infrastructure).

Conclusions

The profile of extensive sheep breeders in Greece is quite disappointed. Their self-assessment concerning professionalism (sheep breeding perceived as the main occupation) is characterized by occasional, incidental and individualized options paying more attention to micro-economic (milk-related income) and to certain elements of stable capital (location of stable and the existence of milk storage system). On the contrary, professionalism does not appear enhanced by organized utilization of information (in terms of training), farm size and structure (such as animal capital or personnel) or possible family-based entrepreneurial tradition or infrastructure on grasslands. A possible criticism would be that there is obvious unawareness of connecting professionalism with the development of a sound and viable holding, after serious investment of time, thinking and rational structure. In other words, the identification of professionalism only with the final results (duration of milk production and relevant income) and a very elementary stable capital investment (milk storage system) and not with strategic operational options (e.g. mechanization or not, adoption or not of wider production plan, etc.) or infrastructure on grasslands, can be criticized as a quite superficial and incidental entrepreneurial behaviour disregarding any issue of sustainability, either in terms of competitiveness or adaptiveness to the market.

The following issues can be posed as questions for further research:

• Which policy instruments (regulatory, financial or informational) would be appropriate for changing the entrepreneurial attitudes of sheep breeders (supposing that any change is necessary) and whether the possible changes would find acceptance in the context of long-term local tradition. An appropriate combination of the above mentioned policy instruments is necessary for achieving a sustainably effective design and delivery of CAP as well as its acceptable evaluation. Only regulatory means (prohibitions and sanctions) may achieve immediate but not sustainable effects in professionalism. Apart from that, their implementation necessitates enormous surveillance and possibly political costs. The financial incentives may also achieve immediate and noticeable effects which also can easily disappear after the completion of the project. Only through informational instruments (long-term training programs or training programs integrated into the secondary or high school education system) the breeders can be convinced of the necessity of professionalist patterns. Apart from any formal education, the everyday inspections conducted by the state agricultural experts should not constitute only a control but also a consulting procedure.

• Whether and how strongly actual attitudes of sheep breeders endanger the viability of their holding.

Acknowledgments

The authors wish to express appreciation to Mrs Georgia Galliou for her assistance with the interviews and the questionnaires. This study was supported by research funds of Aristotle University of Thessaloniki, Greece.

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Received: March, 27, 2018, *Accepted:* September 3, 2018; *Published:* August, 31, 2019