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SMALL FAMILY FARMS IN THE REPUBLIC OF SERBIA - ANALYSIS OF ENTREPRENEURIAL ORIENTATION AND THE NEED FOR SUPPORT

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Abstract. *Family farms in the Republic of Serbia are mostly small agricultural producers with arable land of small and medium size and with a low degree of process mechanization, where family members work mostly, and farm management is assigned to one family member. Such farms are often in a subordinate position, with weak bargaining power compared to large agricultural producers and large enterprises engaged in agricultural production. Nevertheless, the chance of further development of such farms lies in their positive entrepreneurial orientation and readiness for innovation and change. This paper presents research on the entrepreneurial orientation of family farms in the Republic of Serbia. The survey sample consisted of 72 farms from different locations in the Republic of Serbia. Entrepreneurial orientation was observed through the following elements: readiness of farms to join efforts, participation in large supply chains, readiness to standardize products and processes, readiness to export, readiness for changes and delegation of management processes, as well as readiness for farm development by improving knowledge about agriculture, management, and entrepreneurship. The results presented in the paper provide a clear insight to the support creators about the potential for improving the position of small farms in the Republic of Serbia.*

Keywords: *small agricultural farms, entrepreneurship, entrepreneurial orientation, Republic of Serbia*

1. INTRODUCTION

The dynamic world of today, in which abundance reigns, as well as great availability of resources for life and well-being, creates conditions for a constant increase in the number of inhabitants that must be fed to survive. Therefore, the need for food has become more than crucial. It is estimated that in 2050, almost twice as much food will be produced to feed humanity than today [5]. Having this in mind, agriculture represents an important economic sector in each national economy. It has powerful growth effects on the other sectors as well, including providing a growing demand for nascent industries [10]. Agriculture also draws great policymakers' attention [11]. This is especially the case in underdeveloped and developing countries and regions. Farming and agricultural businesses are crucial for many rural regions in Europe.

The main role in providing food for humanity is played by large agricultural producers. However, with the increasing need for a healthy life, natural and organic foods, as well as due to the increasing variability of the environment, small farms are becoming more and more important players for meeting the future food demand of the population [17,18]. The reason for this is their greater flexibility, which leads to faster adaptation to change, but also the quality of their agricultural products. Development of small farms is one of the main ways to reduce poverty in low-income countries [25] because small farms make residence of two-thirds of world population [10]. For such small agricultural farms, which are often in a subordinate position, with a weak bargaining power compared to large agricultural producers and large companies engaged in agricultural production, to survive, they must improve their skills and knowledge, be creative and engage in innovation. There are different strategies available to farmers to survive and be successful in a changing economic environment. Entrepreneurship stands out as one of the key strategies that drives innovation, efficiency, and the sector's economic growth.

Observing a group of family farms, their entrepreneurial orientation holds immense significance as it empowers these farms to evolve and thrive in a dynamic agricultural landscape. Entrepreneurialism of small farms is often equated with a farmer's spirit of acting in an entrepreneurial manner which focuses on gaining profit, efficiency, specialization, expansion, and optimization of management (Lance et al., 2014). It encourages a mindset of innovation, risk-taking, and adaptability, enabling family farms to identify and seize new opportunities, diversify their income streams, and effectively manage resources. Understanding the importance of the topic, this paper analyses entrepreneurial orientation of family farms and their need for support in the Republic of Serbia, which is one of the countries with highest potential for agricultural development in the Southeastern Europe. Serbia demonstrates great potential for digital transformation of agriculture as well, as it is noted in the national report on AgTech in the Republic of Serbia for 2023 [20]. Last, but not the least, Serbian government initiatives and EU integration efforts aimed to modernize the agricultural sector and promote entrepreneurship among family farms.

The paper is organized as follows. Section 2 provides a brief review of literature on the importance of entrepreneurship in agriculture, as well as entrepreneurial orientation of small agricultural farms. Section 3 explains the methodology, survey sample and data collection. Section 4 presents and discusses the obtained results. Section 5 concludes.

2. LITERATURE REVIEW

Entrepreneurship in agriculture is of high importance as it drives innovation, efficiency, and economic growth within the sector. Entrepreneurs in agriculture bring fresh ideas, adopt modern technologies, and develop sustainable practices that not only enhance farm productivity but also contribute to food security and environmental sustainability. They create new markets, value chains, and employment opportunities,

fostering rural development. Moreover, entrepreneurial endeavors in agriculture are essential for adapting to changing climatic conditions and global market dynamics. In essence, entrepreneurship is a catalyst for the continued growth and resilience of the agricultural industry, ensuring its capacity to meet the ever-evolving demands of a growing world population. For the purposes of this paper, the literature review is focused on these two areas, namely: the importance of entrepreneurship in agriculture, and more specifically, the entrepreneurial orientation of small agricultural farms.

1.1. The importance of entrepreneurship in agriculture

Entrepreneurship as a term in agriculture is often confused with the term - small business. The majority of small agricultural farmers manage their farms using various conventional management methods and techniques. These farmers are not considered as entrepreneurs, they are considered as small business managers. However, entrepreneurship in agriculture is much more than that, it is considered as a business driven by leadership in change and innovation with the use of modern technology and methods of conceptual thinking and problem solving [14].

According to [13] there are five different groups of farmers, namely: (1) *Economic entrepreneurs*: those who create significant change; (2) *Socially responsible entrepreneurs*: those who, in addition to economic profit, are also concerned about the profit of society and the impact of their work on the environment; (3) *Traditional growers*: those who use traditional, well-established breeding methods that have been tested and guarantee safety; (4) *New growers*: those who diversify their production linked to their existing product portfolio; and (5) *Doubtful entrepreneurs*: those farmers who are held back and try to avoid change.

Based on their analysis, *Fitz-Koch et al.* [7] have determined that entrepreneurship within the agricultural sector takes on various forms, including diversification into food processing, the cultivation of new crops, and engagement in retail and agritourism. Farms facing less favorable financial conditions, such as those with lower liquidity and reduced returns on assets, like small agricultural farms, tend to branch out into non-traditional agricultural activities. Despite an increase in the number of farms venturing into new endeavors, it is noteworthy that these endeavors generally make up only a small portion of the total income for large farms. In contrast, smaller farms experience significant boosts in net income, both in the short and long term, because of these diversifications. Additionally, entrepreneurship in agriculture plays a role in reducing reliance on agricultural subsidies [1,7].

In terms of external impacts, small agricultural farms benefit from entrepreneurial activities in several ways, including mitigating the effects of resource scarcity and environmental impact, increasing employment opportunities, fostering rural development, and offering incentives for individuals to remain in rural areas [7].

To sum up, key conclusion is that entrepreneurial activities within farming create synergies between food production and the provision of supplementary services, such as landscape maintenance, cultural enrichment, and tourism, thereby contributing to the well-being of the rural economy and community. Furthermore, it is important to highlight that entrepreneurial actions can yield benefits on multiple fronts, benefiting individuals, small agricultural farms, and the environment. Notably, the consequences of entrepreneurship are diverse and far-reaching, spanning across various levels [1,7].

1.2. Entrepreneurial orientation of small agricultural farms

In addition to the importance of entrepreneurship in agriculture, it is significant to emphasize the entrepreneurial orientation of small agricultural farms, precisely what triggers the entrepreneurial behavior among them and what are the obstacles and limitations of it.

During the long history of small agricultural farms' development, they have gained great traditional experiences through work and have always reached the goal of economic independence and sustainability through entrepreneurship. The reason for the development of entrepreneurship among farmers can come from three perspectives: a socio-economic perspective, as a means of survival, an opportunity perspective, as a source of new development opportunities and areas, and finally a resource perspective as a source of ways to ensure and better use of farm resources [2]. According to [2], there are three types of farm-based entrepreneurs, namely: pluriactive farmer, the resource-exploiting entrepreneur and portfolio entrepreneur. Pluriactive farmer type refers to farmers that undertake entrepreneurial ventures aimed at expanding and increasing the sustainability of the farm, and it concern the expansion of the product offer and placement. Resource-exploiting entrepreneur refers to farmer who aims to better use of the existing farm resources to generate new income through related activities, but also completely unrelated activities such as ethno-tourism. Finally, portfolio entrepreneur is considered as an innovative entrepreneur who, in combination with his own and borrowed resources, creates new solutions, new ways of working, new products or, in other words, creates innovations in agriculture [2].

According to [3], entrepreneurially inclined small agriculture farms are likely to encounter the following difficulties: (1) narrowing the gap in technological advancement, enabling the agricultural sector to better address the challenges posed by climate change; (2) enhancing the effectiveness of the food supply chain and the competitiveness of the agricultural and food industry; (3) ensuring a consistent source of income and a favorable business environment for farmers and other entrepreneurial stakeholders; and (4) attaining the economic, environmental, and societal objectives of sustainable development, with special emphasis on the significance of multifunctional agriculture and rural development. To achieve the successful development of entrepreneurial orientation of small agriculture farms, it is necessary to work on the entrepreneurial training of farmers and, in addition to the development of entrepreneurial know-how, to work on the development of entrepreneurial skills such as innovation, risk-taking,

conceptual thinking, etc. which can be classified into three large groups: personal skills, interpersonal skills and process skills [19]. In addition, the model of cooperatives and farmers association can also be an excellent model to furthermore raise and develop the entrepreneurial orientation of small agricultural farms [23].

3. RESEARCH DESIGN: QUESTIONNAIRE AND SAMPLE STRUCTURE

The survey on the entrepreneurial orientation of family farms, presented in this paper was carried out during 2020 and 2021. The survey technique used is a structured interview with each owner of the farm individually. The survey was conducted on the group of 72 family farms in the Republic of Serbia. To create a realistic picture of the development of family farms, the survey was carried out in different geographical areas. It was conducted among the family farms in the following municipalities: lowland villages near Pančevo, predominantly represented farms with crop farming activities; hilly village in Smederevo, that are represented by growing fruit and vegetable; highland village near Čačak which predominantly represent the livestock farming. In the observed sample, there was an equal number of farms from all three locations. The structure of the survey sample is presented in Table 1. It represents the sample with three observed characteristics of agricultural farms: the level of farm mechanization, the size of arable area and the level of professional workforce engagement at farm.

Table 1 Survey sample: Categorical variables and frequencies

Categorical variables (for N = 72)		Frequencies (%)
<i>Municipality</i>	Pančevo	33.3
	Smederevo	33.3
	Čačak	33.3
<i>Activity</i>	Crop farming	33.8
	Fruit and vegetable growing	42.8
	Livestock farming	23.4
<i>Mechanization level</i>	manual agricultural tools	1.4
	single-axle tractor	5.6
	tractor	25
	tractor with all auxiliary machines tractor and combine harvester	54.2 13.8
<i>Size of arable area</i>	lower than 1 [ha]	2.8
	between 1 and 5 [ha]	47.2
	between 5 and 10 [ha]	27.8
	between 10 and 20 [ha] higher than 20 [ha]	11.1 11.1
<i>Workforce engagement</i>	one member of family	4.2
	two members of family	20.8
	whole family (3-5 members)	70.8
	whole family plus one worker whole family plus more than one worker	2.8 1.4

The level of mechanization evaluates the degree to which an agricultural farm is equipped with machinery and tools, as well as the level to which the farm is automated

and standardized. According to [9], farm mechanization is one of the several pathways of agricultural development. *The size of the arable area* is an indicator that measures the farm size on which the agricultural production of the observed farm is done. It is usually expressed in square meters or hectares of arable land. A well-known opinion is that the size of a farm's arable area is in relation to farm productivity and economy of scale. However, [22] highlight that the ability to access new technologies is a very important precondition for productivity improvement, especially among small farms. *The level of professional workforce engagement* at farms is an indicator that represents manpower on the observed farm. The study [4] stated that very few farm employees may have a positive impact on farm performance. This survey sample shows that dominant family farms in Serbia are characterized by arable land lower than 5 ha, with an average mechanization level concerning agricultural machines and where members of family are dominantly engaging in farming.

The questionnaire used for the interview contained three groups of questions. The first group of questions was about the farm owner's characteristics – owner's competency for agriculture, management, and entrepreneurship. *The owner's competency for agriculture* is an indicator that measures the competence of the farm owners for agricultural activities. According to [6], higher levels of formal farmers' education led to a positive effect on social and environmental outcomes of individual agribusinesses. These social and environmental outcomes are important attributes of sustainable development of farms. Owner's competency for agriculture is measured on the following scale: 1 – farm owner is willing to use the land for agricultural production; 2 – farm owner has only practical working experience in agriculture; 3 – farm owner has high school degree in agriculture; 4 – farm owner graduated in agriculture; 5 – farm owner has a master's degree in agriculture. *The owner's competency for management* is an indicator that measures the farm owner's professionally developed skills and experience in management which is of great importance for family farm development [16]. Owners' competency for management is measured on the following scale: 1 – farm owner doesn't have any managerial experience; 2 – farm owner has managerial experience from youth and sport organizations; 3 – farm owner has a high school diploma in management; 4 – farm owner has a faculty diploma in management; 5 – farm owner has managerial experience in leading managerial projects. *The owner's competency for entrepreneurship* measures the level of professional competencies and education for entrepreneurship. The main purpose of entrepreneurial education is to support and develop an individual's entrepreneurial intentions [15]. Moreover, participation in entrepreneurship education and training programs positively influences individual entrepreneurial orientation [8] and entrepreneurial readiness [21]. The levels of farm owner's competency for entrepreneurship is measured on the following scale: 1 – farm owner doesn't have entrepreneurial experience; 2 – farm owner had an entrepreneurship course at secondary school but doesn't have real entrepreneurial experience; 3 – farm owner had an entrepreneurship course at secondary school and high school and also has the entrepreneurial experience; 4 – farm owner graduated in the field of entrepreneurship and has real entrepreneurial experience; 5 – farm owner has a master diploma in the field of

entrepreneurship and has real entrepreneurial experience. *The owner's readiness for change* is the fourth characteristic measured. According to [26], an organization's readiness for change refers to its belief, attitude, and intention regarding the extent to which changes are required, as well as its capacity to successfully undertake those changes. Readiness for change is measured with the next scale: 1 – farm owner doesn't accept changes; 2 – farm owner accepts changes if it is mandatory; 3 – farm owner accepts changes when it sees a positive effect on others; 4 – farm owner accepts changes and innovations easily; 5 – farm owner supports changes and innovation processes at his farms.

The second group of questions refer to the selected characteristics of entrepreneurial orientation of small family farms. The third group of questions was about desirable support activities. All variable groups are presented in the next section.

4. RESULTS AND DISCUSSION

Results from previously stated quantitative variables are shown in Table 2 with mean values, standard deviation, and coefficient of variation.

Table 2 Quantitative variables in the survey and their mean values in survey sample

Variables	Mean score (M)	Standard deviation (SD)	Coeff. of Variation (CV)
<i>Owner's competency for agriculture</i>	2.03	0.41	0.202
<i>Owner's competency for management</i>	1.17	0.56	0.476
<i>Owner's competency for entrepreneurship</i>	1.86	0.74	0.396
<i>Owner's readiness for change</i>	3.25	0.67	0.205

Presented results show that in average, owners of small family farms in the Republic Serbia dominantly have only practical work experience in agriculture without formal degree in agriculture education. Coefficient of variation (CV) of 0.202 indicates that the standard deviation is roughly 20% of the mean. Considering the next two variables – owner's competency for management and entrepreneurship, average results reveal that farm owner doesn't have any managerial experience (M=1.17), and that their entrepreneurship competence level (M=1.86) was only with entrepreneurship course at secondary school and without any other previous practical real entrepreneurial experience. Coefficient of variation (CV) of 0.476 and 0.396 respectively, showed relatively high variation (47.6% of mean) and moderate variation (39.6% of mean), which indicate that some family farms in the survey sample are on the lower and higher level from the presented mean. In addition to low level of competencies (agriculture, management, and entrepreneurship), small family farmer showed moderate level (M=3.25) of readiness for change (farm owner accepts changes and innovations easily or when sees the positive effect on other farms). Coefficient of variation (CV) of 0.202 indicates low level of variability in survey sample, which means that there is consensus in family farmers attitude about readiness and willingness to change.

Family farms variability in the sample makes a justification for comparison on selected characteristics of entrepreneurial orientation which are based on the second group of questions. The selected characteristics are about family farm owner's intention for farm enlargement, farm intention to participate and engage in cooperatives and large value chains, agricultural process and products standardization, willingness to support and promote village and local community/ecosystem development, intention to further continuous development of knowledge in agriculture, management, entrepreneurship, entrepreneurial orientation in creating innovation and implementation of innovation, perception of suitability of support, as indicator of support service compatibility with farm's problems and needs. All characteristics were measured using Likert scale form 1 – completely disagree to 5 – completely agree. Furthermore, the owners' competencies are analyzed with suitability of obtained business support and the farm business results improvement. Business results improvement were measured in percentage using next scale: 1: 0-5%, 2: 5-10%, 3:10-25%, 4:25-50%, 5: over 50%.

Table 3 presents the results of Spearman's correlation coefficient that was conducted to investigate whether farm owner's competencies and readiness for change are in relation with farms entrepreneurial orientation that are based on different characteristics of economic and social behaviour. Spearman's correlation coefficient analysis is chosen as a versatile tool for assessing relationships between variables when the data are ordinal or subjective and where the exact numerical values are not as meaningful as the order or ranking of values, like a survey response on Likert scales [24].

Statistically significant Spearman's correlation coefficient results (Table 3) are further noted. Farm owner's intention for farm enlargement is in positive moderate and significant correlation ($p < 0.01$) with competency for entrepreneurship (0.450), and readiness for change (0.331). Therefore, entrepreneurial education and change readiness can impact expansion of farming operation. Farm participation in cooperatives is in low positive and significant correlation ($p < 0.05$) with competency for agriculture (0.233) and management (0.256). Entrance into large value chains is a positive decision of every entrepreneur. The results showed a positive low correlation with competence for agriculture (0.246). Product and process standardization correlate with competency for management (0.238) and readiness of changes (0.398). Product and process standardization is one of the critical prerequisites for successful management of a business. Willingness to village and local community/ecosystem development is in lower significant correlation ($p < 0.01$) with competency for agriculture (0.267), management and entrepreneurship (0.331). Future development of knowledge showed lower positive correlation with farm owner's competency for agriculture (0.268) and entrepreneurship (0.441) as well as moderate positive correlation with readiness for changes (0.409). The suitability of support, as an indicator of support service compatibility with farm's problems and needs is significantly connected to competency for management (0.240) and readiness of changes (0.268). Finally, farm business results improvement is in higher positive correlation with readiness for change (0.502).

Table 3 Spearman's coefficient correlation: farms owner' competencies and entrepreneurial orientation

Spearman's rho (N=72)	Competency for agriculture	Competency for management	Competency for entrepreneurship	Readiness for change
<i>Farm enlargement</i>	0.123	0.181	0.450**	0.331**
<i>Participation in cooperative</i>	0.233*	0.256*	0.228	0.076
<i>Large value chains</i>	0.246*	0.164	0.132	0.095
<i>Product and process standardization</i>	-0.007	0.238*	0.193	0.398**
<i>Village development</i>	0.267*	0.236*	0.331**	0.187
<i>Future development of knowledge</i>	0.268*	0.15	0.441**	0.409**
<i>Creation and innovation implementation</i>	0.355**	0.236*	0.372**	0.519**
<i>Suitability of support</i>	0.146	0.240*	0.241*	0.268*
<i>Business improvement</i>	0.000	0.102	0.22	0.502**
Stat. significance	* $p < 0.05$; ** $p < 0.01$			

The third group of questions were about the gap between expected and realized type of support activities. The results are presented in Table 4, for each support activity that is obtained as a difference among the percentage of small family farms that expect the specified support activity and percentage of family farms that obtained that activity.

Table 4: The gap between expected and realized forms of support

N°	Support activities	Difference [%]	Rank
1.	<i>Well-timed information about agricultural businesses' conditions</i>	43.2	11
2.	<i>More favorable loans for agriculture</i>	52.3	9
3.	<i>Guaranteed selling price</i>	65.9	8
4.	<i>Tax relief</i>	75.0	7
5.	<i>Higher subventions for seeding, mechanization, fertilizing...</i>	75.7	6
6.	<i>Rural transport infrastructure development</i>	34.1	13
7.	<i>Modern electricity supply system</i>	36.4	12
8.	<i>The improvement of water supply system</i>	50.0	10
9.	<i>The improvement of sewage network</i>	86.3	3
10.	<i>The improvement of waste disposal</i>	65.9	8
11.	<i>The improvement of anti-hail protection</i>	88.6	2
12.	<i>Preventing drought</i>	65.9	8
13.	<i>Education development in villages</i>	77.3	5
14.	<i>Health service development in villages</i>	91.0	1
15.	<i>Trade development in villages</i>	81.9	4
16.	<i>Tourism development in villages</i>	52.3	9
17.	<i>Help in transport of agricultural products</i>	16.4	14

Observing the obtained results, the support activities with the largest gap between expected and realized are health service development in villages (91%); improvement of

anti-hail protection (88.6%); the improvement of sewage network (86,3%). The results presented in Table 4 indicate that support is not at the adequate (expected) level yet, and that it is necessary to put effort to reach the expected levels.

5. CONCLUSION

Entrepreneurial orientation of family farms holds significant importance in contemporary agriculture. This orientation fosters innovation, adaptability, and competitiveness within the agricultural sector. Family farms that embrace entrepreneurial values are better equipped to respond to changing market dynamics, environmental challenges, and technological advancements. Moreover, their willingness to take calculated risks, seek new opportunities, and invest in sustainable practices contributes to the long-term viability of both the individual farm and the broader agricultural industry. Recognizing and promoting entrepreneurial orientation in family farms is essential for enhancing their resilience and ensuring the sustainability of agriculture in a rapidly evolving world.

This paper analyses entrepreneurial orientation of family farms in the Republic of Serbia, as well as their need for support. Entrepreneurial orientation of a farm may influence performance in small farm-based ventures. Even if earlier literature has described farmers as more conservative business owners compared to non-farm business owners, our study shows that those farm businesses that do engage in entrepreneurial efforts also get rewarded for these efforts. For the resource-based view scholars, our findings suggest that the firms' entrepreneurial orientation might be an important 'resource' that needs to be accounted for. In addition, the paper shows that support provided to small farms is not at the expected level. Thus, it is necessary to put effort to reach the expected levels. Family farms today require multifaceted support to thrive and contribute to sustainable agriculture. This support should encompass financial assistance, access to modern technology, education and training, and policy frameworks that prioritize their well-being. Additionally, fostering a supportive community and market environment is crucial. In conclusion, a holistic approach that addresses the diverse needs of family farms is essential to ensure their resilience, productivity, and long-term success in the face of evolving challenges.

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