

Article

Farm Household Income Diversification as a Survival Strategy

Štefan Bojnec ^{1,*}  and Kristina Knific ²¹ Faculty of Management, University of Primorska, Izolska vrata 2, SI-6101 Koper, Slovenia² Municipality Gorenja vas-Poljane, Poljanska cesta 87, SI-4224 Gorenja Vas, Slovenia; kristina.knific@obcina-gvp.si

* Correspondence: stefan.bojnec@fm-kp.si or stefan.bojnec@siol.net

Abstract: The analyses focus on the structural change in agriculture and farm households for the selected hilly and mountainous areas in Slovenia before and after the accession to the European Union, with an emphasis on empirical analysis of a sample of income diversification of rural households in the census years, and the importance of self-employment for farm households' well-being and food security. A *t*-test was applied to investigate the differences of arithmetic means between the two municipalities and between the two census years, and an F-test with analysis of variance was used for the differences of arithmetic means between four socioeconomic types of agricultural households (AHs). The number of farm households has declined with heterogeneous patterns according to their socioeconomic type and their location areas according to the level of economic development and natural farming conditions. Farm exits do not necessarily mean discontinuation of other nonfarming activities at a household. While the number of farm households leaving farming has increased, there has also been an increase in farm households engaged in other gainful activity such as supplementary farm activities and in off-farm employment and off-farm incomes. Income from farming for most households is not sufficient for survival, and therefore, diversification of income for households is imminent. Diversification of income from self-employment is important for more than one-third of households that maintain agri-food production for the market. Income from self-employment is an important source of income for household well-being and for investment in agricultural production to improve incomes from farming activities. Expansion of self-employment impacts the lack of time, business risks, and lack of interest of households to expand the business by renting external sources.

Keywords: structural change; income diversification; well-being of farm household; self-employment; food security; hilly and mountainous areas; sustainable rural development



Citation: Bojnec, Š.; Knific, K. Farm Household Income Diversification as a Survival Strategy. *Sustainability* **2021**, *13*, 6341. <https://doi.org/10.3390/su13116341>

Academic Editor: Marian Rizov

Received: 26 April 2021

Accepted: 29 May 2021

Published: 3 June 2021

Publisher's Note: MDPI stays neutral with regard to jurisdictional claims in published maps and institutional affiliations.



Copyright: © 2021 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

1. Introduction

Rural areas of the European Union (EU) countries covered 91% of the territory, with more than 56% of the population [1]. With the EU enlargements in 2004, 2007, and 2013, the share of EU rural areas increased but slightly declined with Brexit in 2020 [2,3]. Given the large proportion of small, mostly subsistence farms, agriculture in the new EU member states is lagging in productivity and incomes [4–6].

Before the EU accession, the new EU member states had opportunities to provide financial assistance and support to accession countries in the development of rural areas and the multifunctional role of agricultural activity. This provided the basis for the economic development of other activities in rural areas [7]. The most important pre-enlargement implemented program was the Special Accession Program for Agricultural and Rural Development (SAPARD). The pre-accession SAPARD aid was a crucial financial instrument addressing the structural adjustment in agriculture and rural areas.

After the accession, the new member states adopted the policies of the EU, of which the most important for agricultural activity is the Common Agricultural Policy (CAP) and rural development policy. For example, the EU, in the financial perspective for the

2007–2013 period, earmarked support to agriculture (33.9%) and its role in rural development (8%) amounting to slightly less than 42% of the EU budget [8]. However, from the Farm Accountancy Data Network (FADN), whose fundamental objective is to provide information on absolute and relative incomes of farmers [9], it is scarcely known what happens to the incomes of agricultural households (AHs) with small farms, which in some post-communist countries represent a relatively large proportion of AHs [10,11]. For example, in the 2010 census of AHs, in Slovenia, 40,708 AHs, or 47% of AHs, were of a size below the sampling 2 European Size Units [12].

There is a lack of data for small farms, including subsistence and semi-subsistence farms. The available data are mostly collected through the statistical censuses of population and AHs, which are often conducted every ten years. The FADN sample focuses on more viable, commercial farms and excludes small farms in the FADN sample (size of farms below the sampling criteria). In addition, the absence of data on nonfarm incomes of AHs can be related to the official data collection, which only takes place in some EU member states [13]. Furthermore, the results often refer to both agricultural enterprises and AHs, which vary and differ significantly both in terms of economic sizes as well as ownership and operating characteristics and business objectives. For Slovenia, for example, it is barely known what is happening with AHs within the country, with the AHs from various areas and territories of the country and with different groups of AHs according to their socioeconomic types [14–16].

In the context of this paper, we present the results of analyzing structural changes in agricultural and rural areas in the municipalities of Škofja Loka (ŠL) and Gorenja vas-Poljane (GVP) in Slovenia, with an emphasis on empirical analysis of diversification of incomes for the sample of AHs before the accession to the EU and after the accession to the EU, considering the importance of self-employment for rural AHs. The peculiarity of this analysis is that it is carried out for the whole sample of AHs, for AHs by socioeconomic type, and for AHs on territories with different levels of economic development and different natural factor endowments for agricultural production. This approach enables identifying structural changes in the AHs, which would remain, in the case of one point of view (e.g., the whole territory), unrecognized, especially if the direction and speed of structural changes between territories with different natural factor endowments and economic development resources and the socioeconomic types of AHs are different. Furthermore, we present the reasons, effects, and obstacles to the development of diversification of incomes for AHs with self-employment and use them to explain changes in diversification of incomes on AHs. The study placed this in a broader context, highlighting its importance.

The article is organized in the following way. The second section presents the material and methods, focusing on the study background, and defines the purpose of the research and its significance, with a review of the current state of the research field. The third section presents the results of the hypotheses' testing, highlighting the findings with their discussion and implications. The final section derives the principal conclusions.

2. Materials and Methods

2.1. Theoretical Background

Keeping the family tradition and farming in AHs are a prerequisite for rural development and realization of the multifunctional role of agriculture in rural areas. The structure of production units in the primary agricultural activity reflects continuous changes in the economic, social, cultural, historical, political, technological, and geographical environment [17,18]. Furthermore, many authors suggest the complexity and interconnectedness of factors of structural changes in rural AHs (e.g., [18–22]). The strategic orientation, which is reflected in the decline in the significance of primary agricultural activity and increasing importance of the multifunctional role of agricultural activity of AHs, requires that rural AHs that want to maintain farm activities and their survival diversify production resources and products [23,24]. The important factors of structural change in AHs include income from agriculture, compared with income from nonagricultural employment [25], which in

the most developed economies reflects the efficient organization of work in the context of AHs and additional off-farm employment [26,27]. Higher incomes from nonagricultural employment compared with incomes from agriculture are raising the opportunity costs and can represent a stimulus for AHs to increase agricultural incomes (e.g., with extension of the farm) or be a first step toward the abandonment of agricultural production and exit from the sector [28–30]. Nonagricultural incomes of AHs have gained importance for the survival of AHs and labor mobility both in developed and in developing countries [31–33]. Rural agricultural holdings with smaller farms can survive mainly due to nonagricultural incomes [34–36]. Nonagricultural incomes also include the incomes of rural agricultural holdings from supplementary activities, which allow rural AHs to increase use of the labor force, achieving parity of income or supplementary income to primary agricultural activity and improving quality of life [37–41]. Employment outside agriculture, in addition to the economic development of the region, also promotes good infrastructure (transport and communication) and educational level of the members of the rural AHs [42,43], while the effect of other inflows (social support and rentals) and tax relief has the opposite effect [13,44,45].

To understand the structural changes in agriculture and farm household income, diversification strategies need to be considered to take into account the dual role of the farmer or head of AH (entrepreneur/owner and worker), who with a degree of exploitation of their own work defines the relationship between the marginal function of consumption and labor productivity on the farm and outside the farm. The decisions of AHs are not merely a reflection of natural conditions and market conditions but also of the subjective wishes of the members of the AH [46] and the presence of nonagricultural employment [47,48].

We aim to empirically test the basic thesis that Slovenia's accession to the EU affected the income of AHs, which is reflected in the change of AH income from agricultural and nonagricultural incomes and the socioeconomic type of AHs.

2.2. Presentation of the Studied Rural Area

Slovenia, with approximately 100 inhabitants per km², belongs among the relatively sparsely populated EU countries and countries with an above-average share of rural areas [2]. The studied rural area consists of the municipalities of ŠL and GVP [49,50]. They are in a rural hilly, mountainous area of the pre-alpine region of 299 km² (Figure 1) and differ from each other in terms of natural conditions for agricultural production and level of economic development. They represent two relatively different “faces of rural areas”, which enables the analysis of structural changes in AHs by two mutually different rural hilly, mountainous areas within the country.

According to the OECD [51] methodology, both studied municipalities are included among the rural municipalities: municipality of ŠL (slightly less than 150 inhabitants per km²) was three times more densely populated than the municipality of GVP (slightly more than 44 inhabitants per km²) [52]. The municipality of ŠL is economically more developed than the municipality of GVP. This is valid both for the number of business entities as well as the number of plants with craft activities, while the municipalities were, in the studied years 2000 and 2010, comparable in terms of the level of an average gross salary per employee, though slightly below the Slovenian national average. The registered unemployment rate was slightly higher in the municipality of ŠL but lower than the Slovenian national average.

The average utilized agricultural area (UAA) per AH for the population of AHs was 6.7 ha, which is a slightly more than the Slovenian average (5.9 ha) [12], but it was of poorer quality. For example, for area of arable land, it was 0.4 ha in AHs in the municipality of GVP, 1.4 ha in AHs in the municipality of ŠL, and 1.9 ha for Slovenia as a whole.

Natural endowments and conditions for agricultural production in the municipality of GVP are limited for grazing livestock breeding, of which the most developed are cattle and milk production, while on the area of Soriška fields in the municipality of ŠL, crop production is also possible. The whole area of the municipality of GVP is classified as

hilly or mountainous areas, which are characterized by limited possibility of using the land and require the use of more expensive specialized machinery. According to the Ministry of Agriculture and Environment [53], the entire territory of the municipality of GVP and almost 84.5% of the territory of the municipality of ŠL are located in the hilly or mountainous areas; the rest of the area covers lowland with better natural conditions for agricultural production (Figure 1).



Figure 1. Map of the studied Škofja Loka (ŠL) and Gorenja vas-Poljane (GVP) municipalities. Source: local tourist agency, Blegoš [54].

2.3. Methods and Data

The data on incomes of AHs were obtained through personal interviews in the sample that included 60 AHs from the municipalities of ŠL and GVP, representing approximately 5% of the population of production active AHs from the census of AHs in 2000 (four years before the accession to the EU) and 2010 (six years after the accession to the EU). The sample of AHs within municipalities was selected as a proportionally stratified random sample of AHs. The stratum were socioeconomic types of AHs according to the study by [55], with the difference that the elderly AHs (all members of AHs older than 64 years) were included in the sampling.

Four socioeconomic types of AHs were included in the research: pure, mixed, and supplementary farms and abandoned farms [55]. The pure farms are AHs without elderly members older than 64 years, none of the core AH members is employed outside the farm, and the annual work unit (AWU) is at least 1.2. AWU represents one-year full-time equivalent of the number of hours worked per employee on the farm (1 AWU = 1800 h annually). The mixed farms are firstly, AHs in which at least one of the core AH members is employed on the farm, at least one of the core members is employed outside the farm, and the amount of work in AHs is at least 1.2 AWUs, and secondly, AHs in which all members of AHs are either employed outside the farm or retired or dependent persons, and the total AWU is greater than 1.0 if they meet the following conditions: (i) nonelderly farm or pure farm and (ii) without supplementary activities on the farm. The supplementary farms are AHs with supplementary activities on the farm with at least 0.7 AWUs in agricultural activity. The abandoned farms are AHs that are not elderly farms with members of AHs

older than 64 years and not supplementary farms, and in which their AWU in agricultural activity is smaller than 1.0 AWU.

The data used in the study were obtained through personal interviews for the sample of AHs in 2000 and 2010. In the survey interviews with the written questionnaire, all AHs in the sample were involved, except two, which had stopped farming and migrated from the area. The questionnaire survey of 2000 was prepared for the purpose of the international research project [56] and the primary data used are based on [56–58]. The primary data used for 2010 are based on [59], using an adjusted written questionnaire prepared by [60], substantively comparable with [58,61] but only slightly shorter.

In the analysis, data of AHs incomes and data on the opinions of AHs on the set questions regarding future development are included.

Incomes of the AHs in the sample are calculated as the sum of incomes by sources of incomes. Income from agriculture is the difference between revenues from agricultural activities (revenues from livestock, crop production, and from other agricultural sources such as services and rental of machinery) and costs. It also includes net income from forestry operations and state support to agriculture. In the incomes of livestock and crop production, all revenues from sales and value of domestic consumption are considered.

For the calculation of labor input, costs are used as equivalents of AWU. One person can allocate their time in the agricultural activity not more than 1 AWU. Among incomes of farms with supplementary activities (self-employment), their net incomes are considered. Off-farm incomes are included as off-farm net wages. Among incomes of AHs, other allowances of members of AH (social assistance, cash contributions from relatives, and pensions) and other revenues of AH (income from securities, partnerships, gambling, leases, and other such benefits) are also considered. Real incomes of AHs are calculated using the harmonized index of consumer prices and input prices with the 2010 constant base year [62–64].

The analysis of the differences of arithmetic means of AH income between the years before and after the EU accession and between the municipalities of ŠL and GVP are performed by applied t-test, while the analysis of the differences of arithmetic means between socioeconomic types of AHs (pure, mixed, supplementary farms, and abandoned farms) by F-test analysis of variance (One-Way ANOVA) used the Statistical Package for Social Sciences. The acceptable level of statistical significance is at 5%. All views and opinions on AHs were measured indirectly using a five-step Likert scale.

3. Results

3.1. Structural Changes before and after the EU Accession

3.1.1. Structural Changes on Agricultural Households (AHs)

A comparison of the socioeconomic composition of the sample AHs before and after the EU accession shows a smaller number of pure and mixed farms following the EU accession, while the number of abandoned farms and supplementary farms increased. The most common transition was from mixed farms to abandoned farms and from mixed farms and pure agricultural farms to supplementary farms. The number of mixed farms decreased more rapidly, and the number of supplementary farms grew faster in the municipality of ŠL than in the municipality GVP (Table 1).

Table 1. Changes in real and relative incomes of agricultural households.

		N	Real Incomes				Number of Members of AHs	Relative Incomes			
			The Arithmetic Mean (EUR)	Standard Deviation (EUR)	t-Statistic	Sig. Level		The Arithmetic Mean (EUR)	Standard Deviation (EUR)	t-Statistic	Sig. Level
Sample of AHs	(B)	60	23,803	10,163			4.2	6281	3075		
	(A)	58	29,007	19,001			5.1	5902	3568		
	(A–B)	–2	5204	8838	–2.21	0.03	0.9	–379	493	0.30	0.27
AHs from GVP	(B)	30	24,566	11,138			4.2	6311	3227		
	(A)	29	28,306	11,934			5.9	5070	2398		
	(A–B)	–1	3740	796	–1.24	0.11	1.7	–1241	–829	1.68	0.05
AHs from ŠL	(B)	30	23,040	9214			4.1	6251	2969		
	(A)	29	29,708	24,321			4.3	6735	4327		
	(A–B)	–1	6668	15,107	–1.40	0.08	0.2	484	1358	–0.50	0.31
Pure farms	(B)	13	21,092	9900			3.4	6642	3749		
	(A)	7	16,653	11,360			5.4	2910	1307		
	(A–B)	–6	–4439	1460	0.91	0.19	2.0	–3732	–2442	2.53	0.11
Mixed farms	(B)	25	22,809	9414			4.5	5733	2901		
	(A)	15	24,250	11,096			5.3	4787	2458		
	(A–B)	–15	1441	1682	–0.44	0.33	0.8	–946	–443	1.05	0.15
Supplementary farms	(B)	14	28,100	12,334			4.9	6080	3151		
	(A)	18	39,863	17,850			5.5	7629	3803		
	(A–B)	4	11,763	5516	–2.10	0.02	0.6	1549	652	–1.26	0.11
Abandoned farms	(B)	8	23,798	7878			3.1	7759	2097		
	(A)	18	26,919	23,081			4.4	6269	3815		
	(A–B)	10	3121	15,203	–0.37	0.36	1.3	–1490	1718	1.03	0.16

Note: (A) after and (B) before the EU accession, and (A–B) difference between the two periods. Sig. level—significance level. AHs—agricultural households; GVP—municipality of Gorenja vas-Poljane; ŠL—municipality of Škofja Loka; N—number of AHs in the sample. Source: own calculations.

3.1.2. Sociodemographic Characteristics of AH Members

The number of AH members increased slightly. Among the socioeconomic types of AHs, the number of AH members was the highest for supplementary farms, then pure agricultural farms and mixed farms, while fewer household members belonged to abandoned farms.

Males (86%) dominated among the heads of the sample of AHs. The average age of heads in the sample of AHs declined from 55 to 53 years. The oldest heads were of mixed farms (66 years old), while the youngest headed supplementary farms (46 years old) and pure agricultural farms (48 years old). General level of education, overall training, and agricultural education of the heads of AHs improved slightly. Most heads had vocational education. The lowest general education was among heads of mixed farms and the highest among heads of farms exiting from farming. Heads of pure agricultural farms and supplementary farms regularly attended training courses in the field of agriculture, while in the case of the mixed farms, this is indicated only to apply to younger heads.

The average AWU for the activities of acquiring income per AH in the sample after the EU accession was 3.2, which was about one-fifth more than before the accession. The largest average total amount of work was done by supplementary farms, followed by mixed farms and abandoned farms, and the lowest was by pure agricultural farms.

Statistically significant was the increase of the average total volume of work for the sample of AHs, particularly from the municipality of GVP and for supplementary farms. The total volume of work in agricultural activities increased for the sample of AHs, for AHs in the municipality of GVP by almost a quarter and for supplementary farms by 44%. The average amount of work in the supplementary activity has increased for the supplementary farms and for AHs from the municipality of ŠL.

3.2. Diversification of Incomes of AHs

The average total real incomes of the sample of AHs were significantly higher after the accession to the EU, mainly due to slightly higher incomes of AHs from the municipality of ŠL, while for the AHs from the municipality of GVP, they did not change significantly.

The real average total incomes of supplementary farms after the EU accession significantly increased only in the supplementary farms (Table 1).

Relative income is total income per AH member. The average real relative incomes per AH member for the sample of AHs were statistically significantly changed only in AHs from the municipality of GVP. After the EU accession, they were significantly lower by almost a fifth. The average real relative incomes of AHs between the municipalities were comparable before the EU accession, while after the EU accession, they were almost a third higher in AHs from the municipality of ŠL. The decline in the average real relative incomes of AHs from the municipality of GVP was primarily attributable to a lag in the growth of incomes of AHs compared to the growth in the number of AH members (Table 1).

The average real incomes of AHs and the average real relative incomes of AHs were significantly different between socioeconomic types of AHs before the EU accession but not after it. Supplementary farms reached the highest average real total income, while pure farms had the lowest. The difference increased between the both analyzed periods (Table 2).

Table 2. Changes in real and relative incomes of AHs.

Period	N	Real Incomes				Relative Incomes				
		The Arithmetic Mean (EUR)	Standard Deviation (EUR)	F-Statistic	Sig. Level	The Arithmetic Mean (EUR)	Standard Deviation (EUR)	F-Statistic	Sig. Level	
Before	Pure farms	13	21,092	9900	0.90	0.46	6642	3749	1.54	0.23
	Mixed farms	25	22,809	9414			5733	2901		
	Supplementary farms	14	28,100	12,334			6080	3151		
	Farms in exiting	8	23,798	7878			7759	2097		
After	Pure farms	7	16,653	11,360	5.04	0.01	2910	1307	8.47	0.00
	Mixed farms	15	24,250	11,096			4787	2458		
	Supplementary farms	18	39,863	17,850			7629	3803		
	Abandoned farms	18	26,919	23,081			6269	3815		

Note: Before and after the EU accession. F-statistic refers to the analysis of the differences of arithmetic means between the socioeconomic types of AHs by analysis of variance. Source: own calculations.

3.2.1. Incomes of AHs from Agriculture

The average allocation of labor in the sample of AHs in agricultural activities was 1.79 AWU after the EU accession, which was more than before the EU accession. For work in agriculture, AHs from the municipality of GVP spent on average more AWUs than the AHs from the municipality of ŠL.

After the EU accession, among the socioeconomic types of AHs, supplementary farms were those that devoted the most time to agricultural activities (2.35 AWU), then mixed farms (1.70 AWU) and pure agricultural farms (1.68 AWU), but the least was from the abandoned farms (0.42 AWU). The increase in the allocation of labor was significantly higher only for the supplementary farms and AHs from the municipality of GVP.

Average labor productivity in agriculture for the sample of AHs was reduced from 2.2 EUR/h before the EU accession to 1.5 EUR/h after the EU accession, which was attributed to a slightly greater amount of work of AHs and lower incomes of AHs from agricultural activities. The highest labor productivity was achieved by the supplementary farms (3.0 EUR/h) and the pure agricultural farms (3.4 EUR/h), while the average labor productivity of mixed farms was only 0.1 EUR/h.

The average real income of commercial farms (pure, mixed, and supplementary farms) from agriculture increased only for the supplementary farms, while for mixed farms it decreased by more than half. For the pure agricultural farms, the reduction was not statistically significant. The incomes from agriculture for the supplementary farms show a relatively large difference. Relatively high incomes from agriculture were typically achieved due to higher prices of primary agricultural production (mainly meat and milk). In the context of supplementary on-farm activities—dominated by on-farm tourism and the on-farm processing of agricultural products—this can be due to achieved higher prices

for tourist services and for higher added-value processed products, which AHs are selling at farm or at farmers' markets. The reason for the decline of incomes for pure agricultural farms and mixed farms was attributed to the gap between the real declines in agricultural product prices and the real increase in prices of agricultural inputs. Prices of agricultural products measured in real price index of agricultural products have fallen in real terms, while the real prices of agricultural inputs have increased [63,64].

The real average amounts of subsidies increased for the sample of AHs, for AHs in the two analyzed municipalities, and for commercial, market-oriented farms (pure, mixed, and supplementary farms), while this did not hold for the abandoned farms, with a nonsignificant increase (Table 3). Due to the dominance of production-decoupled payments, the difference between commercial farms (Table 4) was attributed to differences in the average farm size of the UAA per farm by socioeconomic type of AH: 22.6 ha of UAA per pure agricultural farm, 11.9 ha of UAA per mixed farm, and 13.2 ha of UAA per supplementary farm. In the case of pure and mixed farms, the subsidy amounts were greater than incomes of AHs from agricultural activities without subsidies.

Table 3. Changes in real incomes from agriculture and real subsidies of AHs.

		N	Real Incomes				Real Amounts of Subsidies			
			The Arithmetic Mean (EUR)	Standard Deviation (EUR)	t-Statistic	Sig. Level	The Arithmetic Mean (EUR)	Standard Deviation (EUR)	t-Statistic	Sig. Level
Sample of AHs	(B)	60	5902	8699	−0.44	0.33	1233	909	−6.20	0.00
	(A)	58	6849	14,063			4589	4091		
	(A–B)	−2	947	5364			3356	3182		
AHs from GVP	(B)	30	6349	8797	−0.22	0.41	1551	1000	−4.60	0.00
	(A)	29	6835	8214			5325	4383		
	(A–B)	−1	486	−583			3774	3383		
AHs from ŠL	(B)	30	5456	8726	−0.38	0.35	915	687	−4.27	0.00
	(A)	29	6862	18,307			3852	3706		
	(A–B)	−1	1406	9581			2937	3019		
Pure farms	(B)	13	12,506	8090	0.90	0.19	1536	929	−9.31	0.00
	(A)	7	9051	8528			9310	2791		
	(A–B)	−6	−3455	438			7774	1862		
Mixed farms	(B)	25	6524	8578	1.34	0.06	1194	755	−5.83	0.00
	(A)	15	2920	7656			5138	3259		
	(A–B)	−10	−3604	−922			3944	2504		
Supplementary farms	(B)	8	−650	2436	−1.13	0.27	272	339	−0.98	0.17
	(A)	18	363	1961			693	1187		
	(A–B)	10	1013	−475			421	848		
Abandoned farms	(B)	14	2405	7746	−2.25	0.02	1572	998	−4.34	0.00
	(A)	18	15,751	21,006			6189	3871		
	(A–B)	4	13,346	13,260			4617	2873		

Note: See note to Table 1. t-Statistic refers to the differences of arithmetic means of AH income and subsidies between the two periods. Source: own calculations.

Table 4. Real incomes from agriculture and real amounts of subsidies.

	Real Incomes from Agriculture				Real Amounts of Subsidies			
	The Arithmetic Mean (EUR)	Standard Deviation (EUR)	F-Statistic	Sig. Level	The Arithmetic Mean (EUR)	Standard Deviation (EUR)	F-Statistic	Sig. Level
Pure farms—B	12,506	8090.26	6.04	0.00	1534	928.89	4.95	0.00
Mixed farms—B	6524	8578.39			1194	775.34		
Supplementary farms—B	2405	7746.39			1572	1572.11		
Abandoned farms—B	−650	2436.42			272	272.08		
Pure farms—A	9051	8528.24	17.67	0.01	9310	2790.53	19.12	0.00
Mixed farms—A	2920	7656.49			5138	3259.06		
Supplementary farms—A	15,751	21,006.46			6189	3870.79		
Abandoned farms—A	363	1960.94			693	1186.65		

Note: (A) after and (B) before the EU accession. F-statistic refers to the analysis of the differences of arithmetic means between the socioeconomic types of AHs by analysis of variance. Source: own calculations.

3.2.2. Incomes of Supplementary Farms from Self-Employment

Supplementary activity of AHs in the ŠL area has had a longer tradition and was important for one-third of AHs. Between AHs in the municipalities of ŠL and GVP, before the EU accession, there was no significant difference in average incomes of AHs from self-employment, while after the EU accession, the difference was statistically significant (Table 5). The number of supplementary farms in the sample AHs increased and was slightly more in the municipality of ŠL, which had better market outlet and off-farm employment opportunities. Furthermore, it was found that the average real income of supplementary farms declined. In addition, the share of incomes from self-employment in the total income of AHs also decreased.

Table 5. Incomes of supplementary farms from self-employment.

		N	Real Incomes from Self-Employment				Share of Income from Self-Employment			
			The Arithmetic Mean (EUR)	Standard Deviation (EUR)	t-Statistic	Sig. Level	The Arithmetic Mean	Standard Deviation	t-Statistic	Sig. Level
Supplementary farms	Before (B)	14	13,094	11,696	1.69	0.05	47%	32%	3.12	0.00
	After (A)	18	7439	7168						
	(A–B)	4	–5655	–4528						
Supplementary farms—Before	GVP	9	12,367	11,772	–0.30	0.38	39%	30%	–1.39	0.11
	ŠL	5	14,403	12,811						
	(ŠL–GVP)	–4	2036	1039						
Supplementary farms—After	GVP	9	4244	2056	–2.06	0.03	13%	7%	–1.96	0.03
	ŠL	9	10,633	9055						
	(ŠL–GVP)	0	6389	6999						

Note: See note to Table 1. t-Statistic refers to the differences of arithmetic means of AHs income between the two periods and between the two municipalities, respectively. Source: own calculations.

The share of income from self-employment in the total income of supplementary farms has decreased. After the EU accession, the share of income from self-employment is significantly different between the municipalities. It was higher for the supplementary farms in the municipality of ŠL than in the municipality of GVP, where it decreased by a little more than 50% (Table 5).

3.2.3. Incomes of AHs from Off-Farm Employment

Diversification of incomes for the sample of AHs with external, off-farm employment did not change significantly over time. The sample of AHs before the EU accession, through diversification of incomes with off-farm employment, earned EUR 8241 (or 37% of total revenue), while after the EU accession EUR 9846 (or 35% of total revenue). Social transfers (mainly pensions and child allowances) remained an important source of incomes for the sample of AHs.

3.2.4. Reasons and Effects of Income Diversification of Supplementary Farms with Self-Employment

As important reasons to start with self-employment, the supplementary farms and abandoned farms mentioned more efficient use of economic capacities (labor and equipment), ensuring higher standard of living, and the perceived market opportunities. As important reasons to start with self-employment, supplementary farms noted the creation of a source of funds for investment in agricultural activity. For pure farms, supplementary activity creates sources of funds for investment in agricultural activity, balancing fluctuating income from agriculture, and represents a more effective way to use economic capacities. The most important effect of self-employment in AHs is the generation of a higher income than incomes from farming and the lowering of the risk of losing the invested capital.

3.2.5. Barriers for Entry and Expansion of Self-Employment

Self-employment of supplementary farms is impeded by limited resources (UAA, full employment of members of AHs, and a lack of capital) and regulatory restrictions

(especially the maximum volume in the context of supplementary activities and high requirements for activity). For renting of external sources, in most cases, AHs were not interested because of the risks, limited demand for outputs, and a higher quality of life in small-scale activities or changes to the existing way of life.

AHs that after the EU accession did not diversify incomes with self-employment activities did not begin with supplementary activities due to various reasons. Pure farms were hindered by the lack of time, high legal requirements, and excessive distance from the market. Mixed farms had given priority to off-farm employment. They did not opt for diversification of incomes with self-employment mainly because of lack of time, unfavorable age, scarcity of space for expansion of farm buildings, longer distance from markets, lack of financial resources, and business risks.

4. Discussion

The number of AHs with professional farming decreased. This finding is consistent with the results of previous studies for Slovenia as a whole [65–67]. The number of AHs exiting from farming or abandoned farms and those that were engaged in supplementary activity increased. The number of mixed farms declined more rapidly, and the number of supplementary farms increased in an area with more developed industry and better natural conditions for agricultural production (in municipality ŠL).

Incomes of AHs from agriculture after the accession of Slovenia to the EU were not sufficient for survival and were lagging behind incomes in nonagricultural activities for most AHs. Before the EU accession, the incomes between the socioeconomic types of AHs were relatively comparable, while after the EU accession they were different. The highest total incomes were achieved in supplementary farms and the lowest in pure agricultural farms. This can be explained by previous findings that incomes from farming were more volatile than other agricultural household incomes [68,69]. The volatility of farming incomes can be explained by volatilities in farm output and sales due to climatic and weather conditions and volatility in farm output prices.

It was confirmed that the allocation of labor in the agricultural activity increased in AHs in the ŠL and GVP municipalities, while labor productivity declined. State support for agriculture increased in the period following the accession of Slovenia to the EU and this covers losses in commercial farms in agricultural activities. This finding confirms possible difficulties to compete on market outlets, particularly with farm production located in less-favored areas [70,71]. Farms in the studied rural areas as well as in Slovenia are smaller than in some other EU member states, where farms, due to bigger size, gain larger amounts of support from government agricultural policies [72,73]. However, farm and rural entrepreneurship can be supported with government policies that are less influenced by farm size, such as rural development program policies and regional development policies [74–76]. Small farms can play an important role in sustainable development of remote rural areas with niche and quality scheme products such as locally produced organic food [77,78]. They can play an important role in farm and rural entrepreneurship and in short supply chains [79–81]. Small farms traditionally associated with subsistence or semi-subsistence farms can be entrepreneurially and commercially oriented and can play a role in the provision of public goods supported by public policies [82,83].

The real average incomes of AHs from agriculture were comparable among the municipalities in the years before and after the EU accession, while there were different changes between socioeconomic types of AHs. The average income from agriculture decreased in the period following the EU accession for mixed farms, while it increased for the supplementary farms. The mixed farms represented the core of the farming sector during the socialist period, but their attractiveness and survival declined, and exit increased later during the EU membership. This finding can primarily be attributable to leadership skills of heads of supplementary farms (higher agricultural degree of education, lower age of head of farms, and farm strategies), especially in combination with use of inputs and the ability to adapt to change and time allocation for farming activities [84,85].

The studied rural municipalities are situated in hilly and mountainous areas, with close distance to the regional town (Kranj) and the capital of Slovenia (Ljubljana). This can provide both suitable living conditions in beautiful nature and favorable employment opportunities on- and off-farms. On-farm, nonfarm employment and income activities include tourism development [86]. The supplementary activity allows AHs on the studied rural territory more efficient use of economic capacity (labor and equipment), ensuring higher standard of living, and the response of AHs to perceived market opportunities.

For farms, supplementary activity creates a source of funds for investment in the agricultural activity, balancing fluctuating incomes from agriculture, and represents a way for possibly more efficient use of economic capacity. An increasing share of farmer revenues from on-farm, nonagricultural diversification for vulnerable farms located in marginal areas for risk exposure reduction is confirmed by the study for Tuscany in Italy [87].

Supplementary activities after the EU accession have successfully developed in an area with more developed local industry and better natural conditions for agricultural processing (municipality of ŠL), while before the EU accession, between the municipalities no statistically significant differences were found. Further expansion of supplementary activities in AHs is often constrained by limited human resources and suitable farm products for processing. Other constraints include the unfavorable age structure, business risks, and lack of financial resources. This can be a challenge for farm management and rural development policies targeting such a specific area [88,89].

Diversification of incomes of AHs with nonagricultural employment on- and off-farms is inevitable for AHs in the studied rural areas. This process for the structural changes in AHs has a bidirectional influence. Nonagricultural employment with supplementary activities on farms that are not related to the processing of primary agricultural production and regular off-farm employment is the first step toward reducing the volume and changes in the type of agricultural production. The supplementary activity on the farm, which is associated with the processing of agricultural products, allows for the preservation and development of primary agricultural activities. It increases revenues from primary agricultural activities due to higher prices from higher value-added products and provides a source of funds for investment. Since most of the work in the agricultural activity in the sample of AHs is conducted by head of farms, in terms of maintaining agricultural production, the employment status of the head of the farm and the transfer of these functions to a farm successor is especially important.

The study findings and their implications are important in the broadest context of subsistence and semi-subsistence farming [90,91] in their transformation toward farm entrepreneurship based on products of higher added value [83,92,93]. The findings can also be important for better understanding of changes in socioeconomic types of farms with part-time farming [94], which was important in the studied rural areas in the past with a combination of work in local labor-intensive factories and afternoon work on the farm. Off-farm employment and daily commuting to work [95] in the recent service economy have taken new forms with trade-offs between career development outside the farm and afternoon work on the farm. This can explain differences in spatial differentiation of farm diversification [96], which has been studied in this paper with comparisons between the two municipalities. Job creation and on- and off-farm income diversification are crucial for AHs' survival, which is consistent with studies for some other countries, particularly developed ones [93,97–99]. Therefore, these are challenging issues for sustainable farm and rural development [100], farm and rural job creation [101,102], and welfare implications of CAP reforms [103–106].

Among future research directions, this could be the opportunity to study the most recent ongoing statistical census of AHs, which will update the previous censuses' data [107,108]. The most up-to-date in-depth evidence on AHs in rural areas and the ongoing census of population will provide the most up-to-date in-depth evidence on population in agricultural and nonagricultural households in rural and urban areas as a challenge for the research in future.

5. Conclusions

The article contributes to the literature on AH income diversification as a survival strategy, which can be important and relevant for AHs in developed and particularly in emerging market economies and developing countries. There can be a strong link between sustainable food security and farm survival strategies. While large-scale commercial farms are important suppliers of food to global food chains, smaller farms can be important for local production and short supply chains.

The article analyzed family AHs, which are largely situated in hilly and mountainous areas, and thus, they are classified as farms in less-favored areas for farming. While they can be less important for commercial farm food supply, they can be important for local production and for maintaining farm survival and farm population in these remote areas. Therefore, they are a part of sustainable solutions for local areas as an element to achieve sustainability of global food security considering agri-environmental protection and sustainable use of land, sustainable life on land, responsible food production and consumption, and well-being of the rural population.

The structural changes in agriculture and AHs for the selected hilly and mountainous area in Slovenia before and after the EU accession with income diversification of AHs confirmed the importance of self-employment for AH well-being and food security. Job creation and income generation activities are crucial to keep the population in rural areas in their transformation from being farm households toward other possible socioeconomic types of households with a diversified income from on- and off-AH activities. A farm exit with a higher level of economic development does not necessarily mean discontinuation of other nonfarming activities and living on a former farm household.

While the number of AHs exiting from farming or the abandoned farms has increased, there has also been an increase of AHs engaged in other gainful activity such as supplementary farm activities and with off-farm employment and off-farm incomes. Income from farming for most AHs has not been sufficient for survival, and therefore, diversification of income for AHs is imminent as a survival strategy. Diversification of income from self-employment has become important for AHs as an important source of income for household well-being and for investment in agricultural production to improve incomes from farming activities. As there can be other employment and income opportunities, particularly for more flexible, young and educated AH members, there can be a trade-off in expansion of self-employment and other activities on and outside AHs. This can be an issue for the research in future: first, to investigate trade-offs on AHs between staying in farming or staying in households without farming activities due to other employment and income opportunities for family members. Second, to study determinants of farm exit or farms becoming abandoned due to possible farming business risks, and lack of interest of AH family members to expand the farm business by renting of external sources or any other reasons related to AH structural change. Finally, to update the study on AH income diversification strategies, food security, and well-being of AH in hilly and mountainous areas and their sustainable rural development.

Author Contributions: Conceptualization, K.K. and Š.B.; methodology, K.K. and Š.B.; software, K.K.; validation, Š.B. and K.K.; formal analysis, K.K. and Š.B.; investigation, K.K.; resources, Š.B. and K.K.; data curation, K.K. and Š.B.; writing—original draft preparation, K.K. and Š.B.; writing—review and editing, Š.B.; visualization, Š.B. and K.K.; supervision, Š.B.; project administration, Š.B. and K.K.; funding acquisition, Š.B. Both authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: Data sharing not applicable. Data sharing is not applicable to this article.

Conflicts of Interest: The authors declare no conflict of interest.

References

1. EC. *Rural Development Policy 2007–2013*; European Commission: Brussels, Belgium, 2007. Available online: http://ec.europa.eu/agriculture/rurdev/index_sl.htm (accessed on 15 June 2012).
2. Eurostat. European Population Compared with World Population. In *Europe in Figures*. 2013. Available online: http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/European_population_compared_with_world_population (accessed on 22 August 2013).
3. Eurostat. *Statistics on Rural Areas in the EU*; European Commission, Eurostat: Luxembourg, 2021.
4. Buchenrieder, G.; Möllers, J.; Happe, K.; Davidova, S.; Fredriksson, L.; Bailey, A.; Gorton, M.; Kancs, D.; Swinnen, J.; Vranken, L.; et al. *Conceptual Framework for Analysing Structural Change in Agriculture and Rural Livelihoods*; Leibniz Institute of Agricultural Development in Central and Eastern Europe (IAMO): Halle (Saale), Germany, 2007.
5. Möllers, J.; Buchenrieder, G.; Csáki, C. *Structural Change in Agriculture and Rural Livelihoods: Policy Implications for the New Member States of the European Union, Studies on the Agricultural and Food Sector in Central and Eastern Europe, No. 61*; Leibniz Institute of Agricultural Development in Central and Eastern Europe (IAMO): Halle (Saale), Germany, 2011.
6. Guiomar, N.; Godinho, S.; Pinto-Correia, T.; Almeida, M.; Bartolini, F.; Bezak, P.; Biro, M.; Bjørkhaug, H.; Bojnec, S.; Brunori, G.; et al. Typology and distribution of small farms in Europe: Towards a better picture. *Land Use Policy* **2018**, *75*, 784–798. [CrossRef]
7. Flury, C.; Giuliani, G.; Buchli, S. Evaluation of Jointness between Agriculture and Rural Development. In *Multifunctionality in Agriculture: Evaluating the Degree of Jointness*; Policy Implications 73–84; OECD: Paris, France, 2008.
8. European Parliament. The CAP in Figures. 2008. Available online: http://circa.europa.eu/irc/opoce/fact_sheets/info/data/policies/agriculture/article_7217_en.htm (accessed on 7 March 2013).
9. Hill, B.; Cook, E. Delimiting the Household Unit and Defining Agricultural Households—Issues Faced in the Methodology of Eurostat’s Income of Agricultural Households Sector (IAHS) Statistics. 2002. Available online: <http://ageconsearch.umn.edu/bitstream/123456789/20355/1/cp02hi03.pdf> (accessed on 7 February 2008).
10. Davidova, S.; Fredriksson, L.; Bailey, A. Subsistence and semi-subsistence farming in selected EU new member states. *Agric. Econ.* **2009**, *40*, 733–744. [CrossRef]
11. Davidova, S.; Thomson, K. Family farming in Europe: Challenges and prospects. In *Directorate General for Internal Policies, Policy Department B: Structural and Cohesion Policies*; European Parliament’s Committee on Agriculture and Rural Development: Brussels, Belgium, 2014.
12. Dernulc, S.; Iljaš, U.; Kutin, B.; Orešenik, I.; Cunder, T.; Golež, M.; Juvančič, L. *Popis Kmetijskih Gospodarstev, Slovenija 2000*; Zavod Republike Slovenije za Statistiko: Ljubljana, Slovenia, 2002.
13. Hill, B. *Farm Incomes, Wealth and Agricultural Policy*; Ashgate: Aldershot, UK, 2000.
14. Erjavec, E.; Juvančič, L.; Oblak, O.; Kožar, M.; Moljk, B.; Kolarek, P.; Kavčič, S. *Economic Diversification and Labour Adjustment in the Rural Households in Slovenia*; Working Paper EC Phare Ace Research Project P98-1090-R; University of Ljubljana, Biotechnical Faculty, Chair for Agricultural Economics, Policy and Law: Domžale, Slovenia, 2002.
15. Möllers, J.; Fritzschn, J.; Buchenrieder, G. Farm and Non-farm Incomes of Rural Households in Slovenia Canonical Correlation Analysis. *South East Eur. J. Econ. Bus. Sciendo* **2008**, *3*, 39–48. [CrossRef]
16. Moellers, J. Effects of Rural Non-Farm Employment on Poverty and Income Distribution: Evidence for Macedonia and Slovenia. *J. Income Distrib.* **2011**, *20*, 23–37.
17. Boehlje, M. Structural Changes in the Agricultural Industries: How Do We Measure, Analyze and Understand Them? *Am. J. Agric. Econ.* **1999**, *81*, 1028–1041. [CrossRef]
18. Happe, K. Structural change in Agriculture. In *Conceptual Framework for Analysing Structural Change in Agriculture and Rural Livelihoods*; Buchenrieder, G., Möllers, J., Happe, K., Davidova, S., Fredriksson, L., Bailey, A., Gorton, M., Kancs, D., Swinnen, J., Vranken, L., et al., Eds.; Institut für Agrarenwicklung in Mittel- und Osteuropa (IAMO): Halle (Saale), Germany, 2007.
19. Reimund, D.A.; Charles, V.M.; Martin, R.J. Factors affecting structural change in agricultural subsectors: Implications for research. *Southern J. Agric. Econ.* **1977**, *9*, 11–19. [CrossRef]
20. Boehlje, M. Alternative Models of Structure Change in Agriculture and Related Industries. *Agribusiness* **1992**, *8*, 219–231. [CrossRef]
21. Chavas, J.P. Structural change in agricultural production: Economics, technology and policy. In *Economics, Technology and Policy*; Taylor Hall, University of Wisconsin: Madison, WI, USA, 2001; pp. 263–285.
22. Harrington, D.H.; Reinsel, R.D. A synthesis of forces driving structural change. *Can. J. Agric. Econ.* **1995**, *43*, 3–14.
23. McGehee, N.G.; Kyungmi, K. Gender and motivation for agri-tourism entrepreneurship. *Tour. Manag.* **2005**, *43*, 161–174. [CrossRef]
24. Salvioni, C.; Henke, R.; Vanni, F. The impact of non-agricultural diversification on financial performance: Evidence from family farms in Italy. *Sustainability* **2020**, *12*, 486. [CrossRef]
25. Breustedt, G.; Glauben, T. Driving Forces behind Exiting from Farming in Western Europe. *J. Agric. Econ.* **2007**, *58*, 115–127. [CrossRef]
26. Schmitt, G. Why is the agriculture of advanced Western economies still organised by family farms? Will this continue to be so in the future? *Eur. Rev. Agric. Econ.* **1991**, *18*, 443–456. [CrossRef]
27. Chaplin, H.; Davidova, S.; Gorton, M. *Non-Agricultural Diversification of Farm Households and Corporate farm in Central Europe*; Imperial College, University of London: London, UK, 2002.

28. Hallam, A. Economies of size and scale in agriculture: An interpretative review of empirical measurement. *Rev. Agric. Econ.* **1991**, *13*, 155–172. [[CrossRef](#)]
29. Weiss, C.R. Do they ever come back again? The symmetry and reversibility of off-farm employment. *Eur. Rev. Agric. Econ.* **1997**, *24*, 65–84. [[CrossRef](#)]
30. Gioia, A. Small farms in Europe: Time for a re-definition. *Eco Rural.* **2017**, *17*, 71–88.
31. Fernandez-Cornejo, J.; Mishra, A.; Nehring, R.; Hendricks, C.; Southern, M.; Gregory, A. *Off-Farm Income, Technology Adoption, and Farm Economic Performance*; USDA, Economic Research Service: Washington, DC, USA, 2007.
32. Bojnec, Š.; Dries, L. Causes of changes in agricultural employment in Slovenia: Evidence from micro-data. *J. Agric. Econ.* **2005**, *56*, 399–416. [[CrossRef](#)]
33. Wang, X.; Herzfeld, T.; Glaben, T. Labour allocation in transition: Evidence from Chinese rural households. *China Econ. Rev.* **2007**, *18*, 287–308. [[CrossRef](#)]
34. Kimhi, A. Is part-time farming really a step in the way out of agriculture? *Am. J. Agric. Econ.* **2000**, *82*, 38–48. [[CrossRef](#)]
35. Kimhi, A.; Bollmann, R. Family farm dynamics in Canada and Israel: The case of farm exits. *Agric. Econ.* **1999**, *21*, 69–79. [[CrossRef](#)]
36. Tweeten, L. *Causes and Consequences of Structural Change in the Farming Industry: Catching up and Falling Behind*; Economic convergence in Europe; United Nations Economic Commission for Europe: Geneva, Switzerland, 1984.
37. Gasson, R. Farm diversification and rural development. *J. Agric. Econ.* **1988**, *39*, 175–182. [[CrossRef](#)]
38. Ilbery, B.; Bowler, I. *From Agricultural Productivism to Post-Productivism*; Longman: Harlow, UK, 1998.
39. Barbieria, C.; Mahoney, E. Why is diversification an attractive farm adjustment strategy? Insights from Texas farmers and ranchers. *J. Rural Stud.* **2009**, *25*, 58–66. [[CrossRef](#)]
40. Knific, K.; Bojnec, Š. Agricultural households in mountain areas in pre- and post-accession Slovenia. *J. Geogr.* **2010**, *5*, 33–42.
41. Bojnec, Š.; Fertő, I. Farm income sources, farm size and farm technical efficiency in Slovenia. *Post-Communist Econ.* **2013**, *25*, 343–356. [[CrossRef](#)]
42. Banker, D.; MacDonald, J. *Structural and Financial Characteristics of U.S. Farms: 2004 Family Farm Report, AIB-797*; USDA, Department of Agriculture: Washington, DC, USA, 2005.
43. Kwilinski, A.; Vyshnevskiy, O.; Dzwigol, H. Digitalization of the EU Economies and People at Risk of Poverty or Social Exclusion. *J. Risk Financ. Manag.* **2020**, *13*, 14.
44. Mishra, A.K.; El-Osta, H.S.; Morehart, M.J.; Johnson, J.D.; Hopkins, J.W. *Income, Wealth, and the Economic Well-Being of Farm Households*; USDA, Economic Research Service: Washington, DC, USA, 2002.
45. Morris, W.; Henley, A.; Dowell, D. Farm diversification, entrepreneurship and technology adoption: Analysis of upland farmers in Wales. *J. Rural Stud.* **2017**, *53*, 132–143. [[CrossRef](#)]
46. Chayanov, A.V. Peasant farm organisation. In *The Theory of Peasant Economy*; Thorner, D., Kerblay, B., Smith, R.E.F., Eds.; The University of Wisconsin Press: Madison, WI, USA, 1986; pp. 33–277.
47. Pfeiffer, L.; López-Feldman, A.; Taylor, E. Is off-farm income reforming the farm? Evidence from Mexico. *Agric. Econ.* **2009**, *40*, 125–138. [[CrossRef](#)]
48. Poon, K.; Weersink, A. Factors affecting variability in farm and off-farm income. *Agric. Financ. Rev.* **2011**, *71*, 379–397. [[CrossRef](#)]
49. Knific, K.; Bojnec, Š. Structural changes in land use of agricultural holdings in hilly rural areas. *Acta Geogr. Slov.* **2015**, *55*, 59–77. [[CrossRef](#)]
50. Knific, K.; Bojnec, Š. Agricultural holdings in hilly-mountain areas in Slovenia before and after the accession to the European Union. *East. Eur. Countrys.* **2015**, *21*, 19–34. [[CrossRef](#)]
51. OECD. *Creating Rural Indicators for Shaping Territorial Policy*; OECD: Paris, France, 1994.
52. SORS. *Statistical Yearbook of Slovenia 2000*; Statistical Office of the Republic of Slovenia: Ljubljana, Slovenia, 2000.
53. Ministry of Agriculture and Environment. *Hribovsko Gorska Območja Občin Gorenja vas-Poljane in Škofja Loka*; Ministrstvo za Kmetijstvo in Okolje: Ljubljana, Slovenia, 2013.
54. Lokalna Turistična Agencija Blegoš. *Karta Škofjeloškega Območja*; Lokalna Turistična Agencija Blegoš: Škofja Loka, Slovenia, 2002.
55. Kovačič, M. *Socio-Ekonomska in Velikostna Struktura Kmetij v Sloveniji v Obdobju 1981–1991*; Univerza v Ljubljani, Biotehniška fakulteta, Oddelek za Agronomijo, Inštitut za ekonomiko: Ljubljana, Slovenia, 1996.
56. EC. *EC-PHARE Project No. P98-1090-R, EU Accession in the Balkans, Policy Options for Diversification in the Rural Economy*; Final Report; European Commission: Brussels, Belgium, 2002.
57. Oblak, O. Ocena Skupnega Dohodka na Kmečkih Gospodinjstvih v Sloveniji [Estimate of the Total Income in Farm Households in Slovenia]. Master's Thesis, University of Ljubljana, Biotechnical Faculty, Ljubljana, Slovenia, 2002.
58. Möllers, J. *Außerlandwirtschaftliche Diversifikation im Transformationsprozess—Diversifikationsentscheidungen und Strategien Ländlicher Haushalte in Slowenien und Mazedonien. Studies on the Agricultural and Food Sector in Central and Eastern Europe*; Leibniz Institute of Agricultural Development in Central and Eastern Europe (IAMO): Halle (Saale), Germany, 2006; Volume 35.
59. Knific, K. Analiza Strukturnih Sprememb Kmečkih Gospodinjstev na Območju Škofjeloškega Podeželja [Analysis of Structural Changes in Agricultural Households in Škofjeloška Rural Areas]. Ph.D. Thesis, University of Primorska, Faculty of Management, Koper, Slovenia, 2013.
60. Möllers, J. *Questionnaire for Households*; IAMO: Halle (Saale), Germany, 2007.

61. Möllers, J.; Zier, P.; Frohberg, K.; Buchenrieder, G.; Bojnec, Š. *Croatia's EU Accession: Socio-Economic Assessment of Farm Households and Policy Recommendations, Studies on the Agricultural and Food Sector in Central and Eastern Europe*; Leibniz-Institut für Agrarentwicklung in Mittel- und Osteuropa IAMO: Halle (Saale), Germany, 2009; Volume 48.
62. SORS. *Revalorizacija Denarnih Zneskov*; Statistical Office of the Republic of Slovenia: Ljubljana, Slovenia, 2013.
63. SORS. *Indeksi Cen in Cene Kmetijskih Pridelkov pri Pridelovalcih, Slovenija, Letno*; Statistical Office of the Republic of Slovenia: Ljubljana, Slovenia, 2013.
64. SORS. *Indeksi cen Inputov v Kmetijstvu, Letno*; Statistical Office of the Republic of Slovenia: Ljubljana, Slovenia, 2013.
65. Bojnec, Š.; Latruffe, L. Farm size, agricultural subsidies and farm performance in Slovenia. *Land Use Policy* **2013**, *32*, 207–217. [[CrossRef](#)]
66. Bojnec, Š.; Fertő, I. Testing the validity of Gibrat's law for Slovenian farms: Cross-sectional dependence and unit root tests. *Econ. Res. Ekon. Istr.* **2020**, *33*, 1280–1293. [[CrossRef](#)]
67. Bojnec, Š.; Fertő, I. The growth of farms: A Hungarian-Slovenian comparison. *Post-Communist Econ.* **2021**, *33*, 79–93. [[CrossRef](#)]
68. Bojnec, Š.; Fertő, I. Do CAP subsidies stabilise farm income in Hungary and Slovenia? *Agric. Econ.* **2019**, *65*, 103–111. [[CrossRef](#)]
69. Bojnec, Š.; Fertő, I. Farm household income inequality in Slovenia. *Span. J. Agric. Res.* **2019**, *17*, e0112. [[CrossRef](#)]
70. Barath, L.; Fertő, I.; Bojnec, S. Are farms in less favored areas less efficient? *Agric. Econ.* **2018**, *49*, 3–12. [[CrossRef](#)]
71. Polakova, J.; Soukup, J. Results of implementing less-favoured area subsidies in the 2014–2020 time frame: Are the measures of environmental concern complementary? *Sustainability* **2020**, *12*, 10534. [[CrossRef](#)]
72. EC. *Socio-Economic Challenges Facing Agriculture and Rural Areas*; European Commission: Brussels, Belgium, 2017.
73. EC. *EU Agricultural Outlook for the EU Agricultural Markets and Income 2017–2030*; DG Agriculture and Rural Development: Brussels, Belgium, 2017.
74. Baum, S.; Frohberg, K.; Hartmann, M.; Matthews, A.; Weingarten, P.; Majewski, E.; Dalton, G.; Davidova, S.; Bojnec, S.; Gorton, M.; et al. *The Future of Rural Areas in the CEE New Member States*; Institut für Agrarentwicklung in Mittel- und Osteuropa (IAMO): Halle (Saale), Germany, 2004.
75. Biczkowski, M.; Biczowska, M. Impact of EU the funds on the diversification of economic activity (of farms) and their role in multi-functional development of rural areas. *Rural Stud.* **2016**, *43*, 23–44. [[CrossRef](#)]
76. Biczkowski, M.; Jezierska-Thöle, A.; Rudnicki, R. The impact of RDP measures on the diversification of agriculture and rural development—Seeking additional livelihoods: The case of Poland. *Agriculture* **2021**, *11*, 253. [[CrossRef](#)]
77. Mantino, F.; Vanni, F. The role of localized agri-food systems in the provision of environmental and social benefits in peripheral areas: Evidence from two case studies in Italy. *Agriculture* **2018**, *8*, 120. [[CrossRef](#)]
78. Bojnec, Š.; Petrescu, D.C.; Petrescu-Mag, R.M.; Radulescu, C.V. Locally produced organic food: Consumer preferences. *Amfiteatru Econ.* **2019**, *21*, 209–227.
79. Zasada, I.; Piorr, A. The role of local framework conditions for the adoption of rural development policy: An example of diversification, tourism development and village renewal in Brandenburg, Germany. *Ecol. Indic.* **2015**, *59*, 82–93. [[CrossRef](#)]
80. Suess-Reyes, J.; Fuetsch, E. The future of family farming: A literature review on innovative, sustainable and succession-oriented strategies. *J. Rural Stud.* **2016**, *47*, 117–140. [[CrossRef](#)]
81. García-Cornejo, B.; Pérez-Méndez, J.A.; Roibás, D.; Wall, A. Efficiency and Sustainability in Farm Diversification Initiatives in Northern Spain. *Sustainability* **2020**, *12*, 3983. [[CrossRef](#)]
82. Davidova, S.; Bailey, A. Roles of small and semi-subsistence farms in the EU. *EuroChoices* **2014**, *13*, 10–14. [[CrossRef](#)]
83. Lecole, P. Can small French farms provide an opportunity for employment in the agricultural sector? *EuroChoices* **2021**, *20*, 48–54. [[CrossRef](#)]
84. Sroka, W.; Dudek, M.; Wojewodzic, T.; Król, K. Generational Changes in Agriculture: The Influence of Farm Characteristics and Socio-Economic Factors. *Agriculture* **2019**, *9*, 264. [[CrossRef](#)]
85. Borychowski, M.; Stepien, S.; Polcyn, J.; Tosovic-Stevanovic, A.; Calovic, D.; Lalic, G.; Zuza, M. Socio-economic determinants of small family farms' resilience in selected Central and Eastern European countries. *Sustainability* **2020**, *12*, 10362. [[CrossRef](#)]
86. Giaccio, V.; Mastronardi, L.; Marino, D.; Giannelli, A.; Scardera, A. Do rural policies impact on tourism development in Italy? A Case study of agritourism. *Sustainability* **2018**, *10*, 2938. [[CrossRef](#)]
87. Boncinelli, F.; Bartolini, F.; Casini, L.; Brunori, G. On farm non-agricultural activities: Geographical determinants of diversification and intensification strategy. *Lett. Spat. Resour. Sci.* **2017**, *10*, 17–29. [[CrossRef](#)]
88. Galluzzo, N. The Common Agricultural Policy and employment opportunities in Romanian rural areas: The role of agritourism. *Bulgar. J. Agric. Sci.* **2017**, *23*, 14–21.
89. Galluzzo, N. The evolution of Romanian agritourism and the role of European Union subsidies in rural areas. *Open Agric.* **2020**, *5*, 159–165. [[CrossRef](#)]
90. Kostov, P.; Lingard, J. Subsistence agriculture in transition economies: Its roles and determinants. *J. Agric. Econ.* **2004**, *55*, 565–579. [[CrossRef](#)]
91. Mathijs, E.; Noev, N. Subsistence farming in Central and Eastern Europe—Empirical evidence from Albania, Bulgaria, Hungary, and Romania. *East. Eur. Econ.* **2004**, *42*, 72–89. [[CrossRef](#)]
92. Niska, M.; Vesala, H.T.; Vesala, K.M. Peasantry and entrepreneurship as frames for farming: Reflections on farmers' values and agricultural policy discourses. *Sociol. Rural* **2012**, *52*, 453–469. [[CrossRef](#)]

93. Weltin, M.; Zasada, I.; Franke, C.; Piorr, A.; Raggi, M.; Viaggi, D. Analysing behavioural differences of farm households: An example of income diversification strategies based on European farm survey data. *Land Use Policy* **2017**, *62*, 172–184. [[CrossRef](#)]
94. Gasson, R. Part time farming: Strategy for survival? *Sociol. Rural* **1986**, *24*, 364–376. [[CrossRef](#)]
95. Rus, P.; Nared, J.; Bojnec, Š. Forms, areas, and spatial characteristics of intermunicipal cooperation in the Ljubljana urban region. *Acta Geogr. Slov.* **2018**, *58*, 47–61. [[CrossRef](#)]
96. Lange, A.; Piorr, A.; Siebert, R.; Zasada, I. Spatial differentiation of farm diversification: How rural attractiveness and vicinity to cities determine farm households' response to the CAP. *Land Use Policy* **2013**, *31*, 136–144. [[CrossRef](#)]
97. McNamara, K.T.; Weiss, C. Farm household income and on-and off-farm diversification. *J. Agric. Appl. Econ.* **2005**, *37*, 37–48. [[CrossRef](#)]
98. Meraner, M.; Heijman, W.; Kuhlman, T.; Finger, R. Determinants of farm diversification in the Netherlands. *Land Use Policy* **2015**, *42*, 767–780. [[CrossRef](#)]
99. Wan, J.; Li, R.; Wang, W.; Liu, Z.; Chen, B. Income diversification: A strategy for rural region risk management. *Sustainability* **2016**, *8*, 1064. [[CrossRef](#)]
100. Knapp, L.; Wuepper, D.; Dalhaus, T.; Finger, R. Revisiting the diversification and insurance relationship: Differences between on- and off-farm strategies. *Clim. Risk Manag.* **2021**, *32*, 100315. [[CrossRef](#)]
101. Unay-Gailhard, I.; Bojnec, Š. The impact of green economy measures on rural employment: Green jobs in farms. *J. Clean. Prod.* **2019**, *208*, 541–551. [[CrossRef](#)]
102. Garrone, M.; Emmers, D.; Olper, A.; Swinnen, J. Jobs and agricultural policy: Impact of the common agricultural policy on EU agricultural employment. *Food Policy* **2019**, *87*, 101744. [[CrossRef](#)]
103. Rizov, M. Rural development and welfare implications of CAP reforms. *J. Pol. Model.* **2004**, *26*, 209–222. [[CrossRef](#)]
104. Rizov, M. Rural development under the European CAP: The role of diversity. *Soc. Sci. J.* **2005**, *42*, 621–628. [[CrossRef](#)]
105. Ashok, K.M.; Meti, S.K.; Vimenuo, S.K. Agricultural diversification and its impact on livelihood security of farmers. *J. Nutr. Health Sci.* **2017**, *1*, 1–10.
106. Volkov, A.; Balezentis, T.; Morkunas, M.; Streimikiene, D. Who benefits from CAP? The way the direct payments system impacts socioeconomic sustainability of small farms. *Sustainability* **2019**, *11*, 2112. [[CrossRef](#)]
107. Eurostat. *Farm Structure Survey 2013-Main Results*; European Commission, Eurostat: Luxembourg, 2013.
108. Eurostat. *Farm Structure Survey 2016-Main Results*; European Commission, Eurostat: Luxembourg, 2020.