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# Agritourism growth and CAP subsidies in Romanian rural areas

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## Abstract

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Since the 1990s, there has been a notable rise in agritourism enterprises in Romania owing to new tourism flows coming from various European countries. The predominant aim of this research was to assess the impact of financial subsidies allocated by the European Union on the growth of Romanian agritourism through a quantitative approach that seeks to identify which socio-economic variables have most affected it, and to assess, in addition, whether the advent of agritourism has lessened the incidence of permanent emigration from Romania. The analysis has been structured in two different stages. The first phase assesses the role that the financial subsidies allocated through the Common Agricultural Policy have played in the growth of agritourism; the second phase investigates the main cause-effect relationships which have acted on the growth of agritourism in Romania. Over the period 2007-2016, socio-economic variables have had an appreciable effect on enhancing agritourism, even if factors such as permanent emigration, people at risk of severe poverty, and productivity in the primary sector, have been the notable drivers in influencing the development of agritourism.

*Keywords:* FADN; PLS-SEM; rural development; emigration; poverty

## Introduction

More than any other former Eastern Bloc country, Romania has suffered an intense emigration following the collapse of the Communist regime, which has predominately affected rural areas (Galluzzo, 2018a; 2018b; 2017). In 2007, as a consequence of further enlargement phases, Romania and Bulgaria both became member states of the European Union. Comparing the financial framework of the previous enlargements in 1995 and 2004 to the later one, the scenario was radically different in 2007, owing to various international agreements and a general scenario of global economic decline that has determined a shrinking of financial subsidies allocated towards agriculture and the Common Agricultural Policy in recent years (Swinbank & Daugbjerg, 2006; Burja & Burja, 2014; Alexandri & Luca, 2008).

According to the classification of farming enterprises that is applied by the European Union on the basis of income level, many Romanian farms fall in the cluster of semi-subsistence or subsistence farms, and have suffered the phenomenon of emigration that is the consequence of socio-economic unbalances between rural and urban areas (Galluzzo, 2018a; 2017; Hubbard et al., 2014; Giurca, 2008; Bradatan, 2014). Financial subsidies allocated by the Common Agricultural Policy have had a notable role in reducing the pauperisation of rural areas where, according to the Romanian Statistical Institute (INSSE), more than 50% of the population live.

Comparing the data of the different NUTS II zones in Romania, findings reveal that the area of Bucharest-Ilfov has suffered less than the regions of the East and the South from socio-economic marginalisation and territorial disparities (Surd et al., 2011). According to these authors, this implies a different impact of the financial supports allocated by the European Union before and after the enlargement in 2007, strengthening the theoretical hypothesis according to which, the poorer a rural area is, the more modest will be its devel-

opment (Galluzzo, 2017; 2018a; 2018b; Surd et al., 2011). The level of GDP per inhabitant can be taken to represent one of the primary financial supports in mitigating the socio-economic disparities, in improving environmental protection, and in strengthening the sustainability of rural territories (Antonescu, 2012; Burja & Burja, 2014; Galluzzo, 2017; Iorio & Corsale, 2010; Abrham, 2011).

Recent quantitative studies have underlined the prominent role of the Common Agricultural Policy in partially mitigating the incidence of rural emigration in Italy and other European states through the growth of productive diversification in farms into agritourism and rural tourism (Galluzzo, 2017; Rizov, 2005).

Rural areas, by their diversification, play a main function in protecting the environmental, hence certain non-traditional and non-codified services such as agritourism, rural tourism, and environmental services, have to be adequately compensated through financial support under the second pillar of the Common Agricultural Policy to be able to merge diversification with environmental protection in rural areas, as Van der Ploeg investigated in his peasant model (Westhoek et al., 2006; Van der Ploeg, 2010). This corroborates the hypothesis that public administrations, both at a local level and also those at a higher level such as the European Commission, must support numerous rural development initiatives in the framework of multifunctionality and pluriactivity (Galluzzo, 2017; Van Berkel & Verburg, 2011).

Recent findings highlight a significant increase of overnight stays of tourists in agritourism facilities over time and even though the agritourism share of tourist stays is notably lower compared to classical tourist infrastructures like hotels, they have had a strong impact on the socio-economic growth of rural areas (Calina & Calina, 2015; Calina et al., 2017).

The growth of agritourism in Romania is significantly due to certain intrinsic features of agritourism that make it an ideal business for family farms with a specific level of skills in the context of a rising market demand for those able to emphasise local foods and give them a fair non-codified value (Pirnea et al., 2012). At the same time, many European administrations have pinpointed agritourism and rural tourism as two of the most important levers for environmental and social protection, specifically for certain mountain areas where agritourism began in Romania in the early 1960s (Ciolac et al., 2011; Matei, 2015). In the South-Eastern and Central Romanian regions, there are many tourist attractions that have had a direct effect in polarising touristic flows, even if, overall, Romania has the lowest competitiveness index value of neighbouring countries such as Bulgaria, Poland, and Croatia (Bran et al., 2010) despite the availability of bunches of services and activities able to satisfy the needs of guests (Cretu et al., 2015).

The key purpose of this research was to assess, using a quantitative approach, the impact of financial subsidies allocated by the European Union on the growth of Romanian agritourism, evaluating which socio-economic variables have most affected it after the enlargement of the European Union, utilising data published by the Farm Accountancy Data Network (FADN) and the Romanian Institute of Statistics (INSSE) in its TEMPO time series.

## Methodology

The first phase of the study used a multiple regression model to investigate the impact of financial subsidies allocated under the Common Agricultural Policy on the growth of agritourism in Romania. Furthermore, through the multiple regression models, the existing relationships have been assessed between the growth of agritourism and other socio-economic variables, such as permanent emigration from Romania, incidence of unemployment, and per capita Gross Domestic Product. The estimation of regressors in the first step of the multiple regression models was done using the GRETL software, and in its algebraic form of matrix can be written (Verbeek, 2006) as:

$$y = X\beta + \varepsilon \quad (1),$$

where $y$ is the dependent variable, in this study, emigration and in the further stage, the growth of agritourism, and $\varepsilon$ is the statistical error. Both the statistical error and the dependent variables are vectors with n-dimensions, and $X$ is a matrix of independent variables which has a dimension: n x k. $\beta$ are the coefficients in the multiple regression model. In this paper, we have used the Weighted Least Squares (WLS) approach due to a non-equal variance among variables, which has implied a correction for the heteroscedasticity that is assessed in the multiple regression approach. Hence, a more efficient estimator has been obtained by down weighting the squared residuals in all observations which resulted in large variances (Koenker & Basset, 1982; Greene, 1993; Verbeek, 2006).

The further stage of investigation assessed the cause-effect relationships in the small sample of Romanian farms that form the FADN dataset, using the non-parametric approach of Partial Least Square Structural Equation Modelling (PLS-SEM) which fits well to the features of the analysis such as the scarcity of theoretical models and the modest dimension of the sample size (Tenenhaus et al., 2004; Hair et al., 2017; Hair et al., 2016; Galluzzo, 2018a; 2018b). In fact, the non-parametric model PLS-SEM requires non-restrictive underlying assump-

**Table 1. Main results in the multiple regression model over the period of investigation 2000-2017. Dependent variable agritourisms in activity in Romania**

| Regressor | Coefficient | Standard error | t-value | p-value |
|---|---|---|---|---|
| Constant | 473.27 | 1.194 | 3.96 | 0.0014*** |
| Employed people | -0.0004 | 8.57 e-05 | -4.29 | 0.0007*** |
| GDP in agriculture | 0.044 | 0.008 | 5.42 | <0.0001*** |
| Emigrated people | 0.025 | 0.014 | 1.69 | 0.1131 |

*** < 0.01; *Source*: author's own elaboration on data from INSSE Tempo dataset published on the website: http://statistici.insse.ro/shop/?lang=en

tions to be applied in contrast to the CB-SEM (Covariance Based Structural Equation Modelling), for which the field of application, the theoretical framework, the constraints, and other basic assumptions are well defined in literature (Hair et al., 2016) in the frame of a parametric approach adequate to estimate a modest sample size of units of investigation with not well defined model specifications, in a model aimed at maximising the difference to the variance (Hair et al., 2017; Hair et al., 2016; Wong, 2013; Vinzi et al., 2010; Galluzzo, 2018b). In this study, the Smart-PLS version 3.2.7 software has been used under a student licence (Ringle et al., 2015).

## Results and Discussion

The multiple regression modelling reveals that the dependent variable agritourism growth is directly correlated to the dependent variable GDP in the primary sector (Table 1). In contrast, an indirect correlation has been found between the variable agritourisms in activity and employed people. Findings corroborate the view that agritourisms represent important opportunities for generating jobs in disadvantaged rural areas. The model of multiple regression fits well to our research target because the values of $R^2$ and adjusted $R^2$ are equal to 0.74 and 0.68 meaning that more than 65% of the variance has been explained by this model.

Using the findings to assess the impact of financial subsidies allocated by the CAP, the growth of agritourism, and the incidence of emigration through the multiple regression model suggest that agritourism has had no effect in reducing emigration (Table 2). A direct effect has been found between the dependent variable emigration and the variable financial subsidies allocated by the National Rural Development Plan; in contrast, the variable financial subsidies allocated by the CAP correlates indirectly to the variable emigration. In regions where the levels of people at risk of poverty and the GDP produced in agriculture are lower, the level of permanent emigration has been more modest. The value of $R^2$ and adjusted $R^2$ underlines that the regression model is able to explain more than 90% of the variance.

The PLS-SEM findings have underlined that the endogenous variable ruralise in Romania has been strongly influenced by the number of agritourism in activity (agrit) and by the financial subsidies allocated under the second pillar (LFA) in favour of farms located in disadvantaged rural areas (Figure 1). In regards to the endogenous variable ruralise

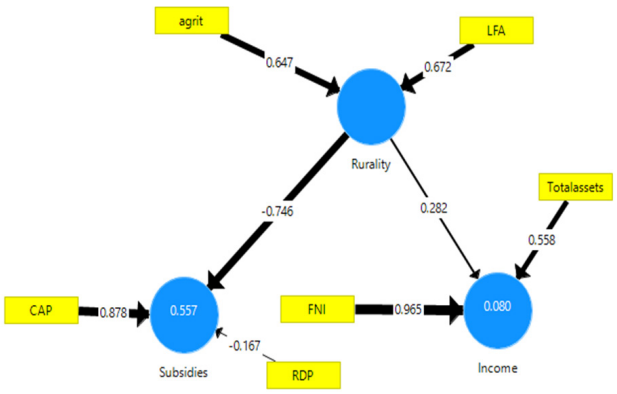


**Fig. 1. Cause-effect analysis in the PLS-SEM**
*Source*: author's own elaboration on data from FADN dataset http://ec.europa.eu/agriculture/rica/database/database_en.cfm)

**Table 2. Results of the multiple regression model. Dependent variable emigrated people**

| Regressor | Coefficient | Standard error | t-value | p-value |
|---|---|---|---|---|
| CAP subsidies | -0.1355 | 0.0441 | -3.073 | 0.0040*** |
| RDP subsidies | 0.0807 | 0.0439 | 1.834 | 0.0746* |
| People at risk of poverty | 0.0539 | 0.0133 | 4.036 | 0.0003*** |
| GDP in agriculture | 1.0701 | 0.0511 | 20.910 | 4.33e-022*** |
| Agritourism | 0.0033 | 0.0422 | 0.0784 | 0.9379 |

* < 0.05-0.10; *** < 0.01; Source: author's own elaboration on data from INSSE Tempo dataset published on the website http://statistici.insse.ro/shop/?lang=en and FADN dataset: http://ec.europa.eu/agriculture/rica/database/database_en.cfm)

an indirect and significant relationship has been found with the variable subsidies allocated by the European Union (CAP and RDP); in contrast, the endogenous variable income has had a positive effect on the ruralise. The variable CAP subsidies have had a more significant impact on the variable subsidies than the variable financial subsidies allocated by the second pillar of the Common Agricultural Policy.

## Conclusion

The funds and other specific initiatives financed by the European Union have partially solved the emigration phenomenon by encouraging a growth of farms specialising in rural tourism and agritourism. In general, the growth of agritourisms in Romania has been correlated to exogenous factors such as the economic crisis in 2008-2010. An increase of arrivals in tourism flows to Romania in general has not been linked to an increase of arrivals in agritourisms. Furthermore, in order to improve the economic and technical efficiency of farms, increasing the financial subsidies allocated under the CAP is pivotal. However, it is important to act on a weighted allocation of public expenditures and financial subsides disbursed under the first pillar of the Common Agricultural Policy rather than the second pillar, which, on the contrary, has had a more modest impact on the growth of the agritourism in other European countries, as several authors have pointed out (Burja & Burja, 2014).

For the immediate future, considering the effects of Brexit and the convergent objectives of the new comer EU member states, there will be a clear reduction in the financial subsidies available under the CAP for the next six-year period 2021-2027. This is unfortunate, since the increased financial subsidies allocated under the second pillar of the Common Agricultural Policy diversified for predominantly rural areas has had the greatest impact on the growth of Romanian agritourisms during the period of study.

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