

Article

The Impact of Tourism on Sustainable Development of Rural Areas: Evidence from Romania

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Received: 31 August 2018; Accepted: 28 September 2018; Published: 1 October 2018



Abstract: Rural tourism has been seen during the last decades as a means for economic development of sensitive localities, especially in rural areas. However, little research has been conducted on the sustainability of the development induced by tourism activities in rural areas, and even so, with contradictory results. Our paper investigated how tourism impacted on the sustainable development of rural localities, focusing on three composite indexes: demographic stability, public utilities, and socio-economic sustainability. Mann–Whitney U test was used to determine the differences on each of the above-mentioned indexes between the rural localities with tourist arrivals and those without. The results showed that there is a significant positive effect of tourism on rural areas translated into higher values of all the indexes analyzed. This study brings valuable contributions to both academics and policy-makers: on one hand, it provides new insights into the impact of tourism activities; on the other hand, it offers valuable information to decisional actors regarding development strategies.

Keywords: rural tourism; sustainable development; Romania; Mann–Whitney U test

1. Introduction and Theoretical Background

In recent decades, tourism has represented one of the most, if not the most, dynamic industries at global level, with growth rates surpassing every economic branch [1]. Despite being considered an activity dominated by urban space and urban population [2], it is becoming increasingly difficult to ignore the importance of rural areas in sustaining the constant growth of the tourism sector [1].

Recent developments in the field of tourism have led to a renewed interest in rural tourism as a factor of socio-economic development and regeneration of rural areas [3–5], especially sensitive localities with weakening agricultural or soft industry activities [6]. Its role as an engine of sustainable development [7,8] is due in mainly to the fact that local attractions, either natural or cultural, are already in place and the level of investment in order to introduce those attractions in the tourist systems is relatively low [9]. Most of the cultural resources are based on the “older ways of life and cultures that respond to the post-modern tourists’ quest for authenticity” [10].

1.1. Tourism as a Factor for Sustainable Development of Rural Areas

Some studies proved that tourism activities induce several positive impacts on rural areas, such as economic growth, economic diversification [11,12], demographic stabilization [13], increase of

economic value for food products and stimulation of agricultural development [14,15], improvement of socio-economic wellbeing [16,17], and creation or growth of new local enterprises [18]. Tourism also contributes to an increase of overall quality of life for residents [19,20] and supports rural sustainable development and reduction of outgoing migration [21]. In fact, tourism is a known mechanism of population retention, especially for the youngsters (more vulnerable towards emigrational phenomena) due to its capacity to rapidly produce new jobs and a lack of high standards requirements for those jobs [13]. Furthermore, the human workforce employed in tourism requires a cheaper reconversion from existing sectors (for example agriculture, low industry, or craftsmanship) [22]. Therefore, it is not surprising that in demographically declining regions from Southern Europe a reversal of emigration was observed when tourism activities started to flourish [23], although tourism development could sometimes be characterized as dualistic or even with short-term effects [23].

Tayebi et al. [24] demonstrated that tourism industry is linked to economic growth in the case of low and middle-income countries from Latin America while Kim and Chen [25] found a long-run equilibrium relationship between tourism and economic growth in Taiwan. Additional studies identified another positive and interesting impact of tourism activities related to sustainable development in sensitive, mostly rural, areas: an induced motivation towards residents to preserve local heritage, either natural or cultural, and to increase the quality of visitors' experiences [15,26–28].

Besides its positive effects upon the destination, it has been proven that rural tourism induces sustainable economic growth in neighboring rural localities via a well-known contagion effect [12], therefore contributing to sustainable regional development [29].

Overall, tourism activities generate an increase of revenues, job creation, facilities modernization, rural female employment, higher living standards for the inhabitants and a better quality of life [30,31]. They also support the growth of local handicrafts [32], and are responsible for the apparition of pride in local and national culture [31]. Thus, it is not surprising that national and local actors around the globe promoted tourism policies and strategies in order to revitalize the suffering rural areas [33–36], rural tourism being perceived as a sustainable 'cure-all' solution for many issues of rural economies [35].

Yet, whilst most tourism planners and local suppliers consider tourism a driver of local sustainable development, studies on residents' attitudes towards tourists underline both negative and positive effects [37–39].

In reality, it is very difficult to achieve all these positive effects of tourism as well as sustainability at the same time [40], because the benefits of tourism for rural areas are not always evident and often are overestimated [41]. The simple presence of tourist infrastructure does not necessarily lead to rural tourism development [12,42] and most often only certain dimensions of sustainability, or only certain rural areas, truly benefit from the positive impact of tourism [43]. Discerning which dimensions or which areas manage to take benefits from tourism introduction is rather a complex and often misleading endeavor.

According to Butler and Clark [44], tourism promotion has positive impact on already strong and rural economies, whilst in weak rural economy it only enhances unbalanced income and employment distributions, despite the fact that positive perceptions upon tourism development can be stronger in areas of lower to moderate levels of development [44,45]. Chang [30] suggested that tourism can only ease the pressure of rural decline, rather than make great impacts on the growth of local economy, his findings being in line with the vision of short-term impact of Loukissas [23]. Baum [46] considers that, outside of the traditional tourist destinations and far from big cities, tourism is not strong enough for supporting the diversification of rural economy, accessibility being the main supporting factor for tourism development [47,48], more important than even the local heritage [49].

In other cases, tourism has helped improving the quality of life, but also generated other negative impacts [40] and a study on Portugal's rural destinations showed no significant contribution of tourism to new nor well paid jobs or to increasing the community's quality of life [37]. Environmental and cultural negative consequences were found as well, such as: destruction of vegetation, increases in

land prices, land speculation, loss of traditional culture, social conflict between hosts and guests [32], unequal distribution of economic benefits, poor inclusion of local communities in the planning process [50], and higher prices of certain goods and services [51]. Unfortunately, negative effects of tourism are sometimes more prominent than their positive impacts, and environmental-physical or economic impacts are often considered more important than socio-cultural impacts [39].

Hence, one question that needs to be asked, however, is what factors determine the rather positive or negative impacts of tourism upon the rural destinations? Various factors seem to be responsible for this differentiation. Thus, negative tourism impact has been linked to poor or lack of marketing [46], poor accessibility [48,52], a lack of important entrepreneurial and tourism skills [9,53], overaged population or strong emigrational phenomena, and also a lack of good administrative skills from the local authorities [9]. Some authors [41,54] suggested that the development of rural tourism would benefit from increasing urbanization and environmental awareness, although their suggestions partially contradicts the notion of rural tourism.

Methodologically, there are several main approaches regarding the measurement of tourism impacts upon rural areas, with a focus on either qualitative or quantitative observing techniques.

Over the past three decades, a rich body of research focused on perceptions and attitudes of locals and stakeholders towards tourism introduction in rural areas as a main approach for impact measurement, [15,16,25,38,40,50], most of those studies use a methodology based on surveys and interviews. Overall, the results of those studies indicated positive impressions and attitudes, particularly regarding the improvement of village appeal and the better capitalization of local resources [30,37].

Other researchers used a quantitative approach, based on tourism indicators, to analyze and monitor the impact of rural tourism development and its sustainability [17,55–57]. In order to tackle the aspects of sustainability in tourism studies, recent reports on the impact of tourism are classifying the quantitative indicators by economic, social, and also environmental aspects [58] and are putting forward the indicators of intensity, such as: tourism density, intensity ratio [41], or tourist specialization [59]. Using a bottom up and top down approach, Park and Yoon [17] proposed 33 indicators regarding four aspects: service quality (accessibility and convenience), facilities (accommodation, subsidiary facilities, environment), management system (community planning, community business, community management and tourism business), and outcome (satisfaction and income total sales). Markovic et al. [60] have made a thorough review of the research that has used indicators of tourism development within specific tourism destinations and their own research emphasized the importance of rural potentials for tourism development using tourist function indicators, such as tourist accommodation density or Schneider's index. Aubert et al. [61] have proposed the tourism index, an aggregation of the demand and supply databases of the tourism market in order to demonstrate strong correlations of the development level of the socio-economic environment and the intensity of tourism.

However, it should be mentioned that, despite the approach used (qualitative or quantitative), it is difficult to find indicators adapted to very complex and diverse realities and to the available statistical data [62].

1.2. Impacts of Tourism upon the Post-Communist Romanian Rural Areas

Little research has been conducted on the influence of tourism activities upon the sustainability of the economic growth in Romania and in the Eastern Europe as a whole. While the contribution of tourism to the local economies cannot be denied, do the tourist activities in Eastern Europe manage to generate sustainable growth in former communist rural areas?

Since the beginning of their economic and political transition, there has been high expectations regarding the development of rural tourism in Central and Eastern Europe (CEE) [46]. Given its previous economic impact in less developed and peripheral regions of Western and Northern Europe [9,63–65], some authors suggested that tourism could represent a key factor for integrating CEE

countries [34] and facilitating their transition to more diversified and sustainable rural economies [66], since the EU membership contributed to rural tourism development [67]. In the Balkans, positive effects such as infrastructure development, or increasing employment and quality of life were observed [68].

However, recent studies suggested that, in reality, the contribution of tourism to rural development in CEE is limited and differentiated [67]. In Eastern Europe, rural tourism strongly depends on domestic demand [46], which is already limited by high shares of rural population and family ties between urban and rural residents [48]. Outside of the traditional tourist destinations, the economic importance and future potential of tourism in rural areas has been overestimated in Croatia [69] and quite limited to certain areas in the case of Poland [46,70] or Serbia [68]. The same considerations could be applied to urban tourism as well [71].

One of the factors affecting tourism impact on rural areas in CEE countries is represented by fragmented, unrealistic, and underfunded promotion campaigns, focused on short-term results [11,67], together with poor tourism infrastructure [72]. Other general issues such as an underrepresentation of the private sector and demographic decline [59,73], differences of performance of local agriculture [59,74], and lower quality of human capital (e.g., lack of necessary skills, knowledge base or training opportunities) [67] are affecting as well the tourism development potential.

As regards Romania, little attention has been paid to the positive role of tourism activities in rural areas, given that this form of tourism did not represent the main concern of national and regional authorities [48,75,76], despite the fact that there is a national strategy for sustainable development until 2030. Rather, NGOs are showing an active role, although their presence is mainly local and most of their activity does not directly focus on the sustainability of rural tourism: ADEPT Transylvania is a foundation dedicated to biodiversity conservation and rural development, Harta Verde (Green Map) Romania is promoting sustainable capitalization of natural heritage of the Bistrita County, while ANTREC, a national association, supports the potential of rural tourism, it is organizing tourist promotion campaigns and it also represents Romanian tourist entrepreneurs to national and international tourist events.

Ioncica et al. [77] have researched the impact of natural resources on Romanian tourism activity and the influences of tourism on the environment. Their findings show that there is a positive evolution of significant environmental indicators with a direct influence on attracting tourists (foreign tourists, especially); but the intensity of this impact is average. Using the survey method, Dezsi et al. [78] have analyzed the social and spatial relations, but also the rural tourism development in a Romanian territory, the Lapus Land (a partly mining area located in the north of Romania). Their findings emphasized the fact that, in the short term, rural tourism activity cannot generate by itself a spectacular economic revival of Lapus Land, except for a relatively low number of households. The tourism pressure in the context of sustainable development has also been the concern of Gogonea et al. [79] as they correlated and interpolated indicators that may outline certain aspects related to the density of tourist fittings, tourist traffic intensity, and capitalization level. The econometric models the authors used highlighted the impact of tourism pressure on the economic and social levels.

Through a comparative analysis of Romanian and Austrian rural tourist areas, Jordan et al. [80] come to reinforce the fact that tourism is the main driving force for rural development for most of the areas. However, they state that, although new initiatives in tourism development come from local population that is also engaged in tourist activities, locals lack vision and leadership, entrepreneurial skills, access to credit facilities and the mobilization of resources. Jordan, Havadi-Nagy, and Marosi [80] focus on three regions from Romania, Poland, and Slovakia following the dynamic of rural tourism activities before and after the EU accession. Their findings show that, for the northeast region of Romania, the impact of accession upon tourism was not noticeable because the opportunities offered by EU membership have not been sufficiently capitalized. Although there is a positive trend of tourism activity since 2001, the authors reveal that the northeastern region has several problems that need to be managed. They propose that the strategies that have worked in Poland and Slovakia's regions to be also implemented in Romania: elaboration and implementation of development plans, knowledge

transfer towards regions, service quality improvement, promotion of national products specific for the country, and creation of new tourism products.

Romanian rural areas have been considered as sensitive areas by the literature, given their accessibility issues [81], difficulties in attracting investments [48], and an overall low development index [82]. Several plans for development were issued by national or local authorities, however, very few of them addressed the tourism as a possible solution [78], despite previous encouraging results. Positive impacts of tourism related to demographic uplift, business environment, and overall quality of life [3] have been reported for Romanian rural areas. A recent study at the NUTS 3 level (county) for the period 2010–2015, showed a positive relation between tourism development and the evolution of agritourism and agritourism entrepreneurship [83]. While in-depth studies are still lacking, it cannot be ignored the beneficial influence of tourism upon Romanian rural areas. Calina et al. [84] have analyzed the main factors favourable to the implementation and development of agritourism and rural tourism, in general, for the 1990–2015 time frame. Their findings show that, in the areas where agritourism has been developed, its impact has been positively significant on the economic, social, cultural, spiritual, and ecological frameworks of the localities.

Regarding the sustainability of tourism activities, despite few studies in the 1990s [67,85,86], and the 2000s [87,88] which triggered signals about the dangers of intensive tourism development, little attention has been given to the relation between tourism and sustainable development. In Romanian mountain areas, rural tourism was coupled with conservation measures [67], but economic diversification has also been low and spatially concentrated [89]. Starting from identifying the rural communities where rural tourism has reached significant levels, Andrei et al. [90] have localized the development regions (NUTS 2 level) and counties (NUTS 3 level) of Romania where the trends of development of rural tourism are significantly above the average registered at national level. This study has used an econometric model based on panel data series in order to highlight the development of rural tourism; quantitative assessments that differentiate NUTS 2 regions from one another were made as well.

Our research investigates the impacts of tourism activities in terms of sustainability in the Romanian rural localities after 2000 and it tries to observe if the tourism activities managed to induce or not a sustainable development. Our paper inquires, first, if tourism activities have a positive or a negative impact upon the indicators of sustainable development on Romanian rural areas. Second, the research seeks to analyze if the impact upon the indicators of sustainable development varies across the different types of sustainability.

In our paper, we hypothesize that tourism activities have a positive impact upon Romanian rural areas in terms of sustainable development.

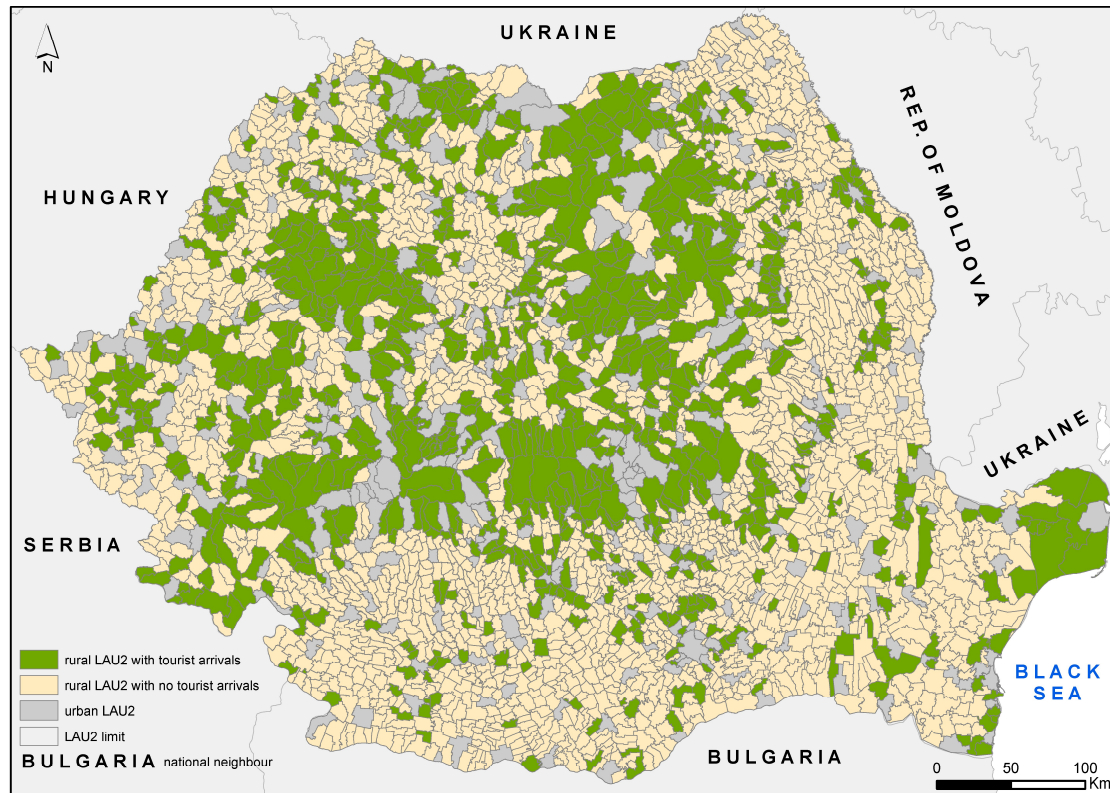
2. Materials and Methods

In order to identify the impact of tourism activities upon sustainable development indicators in Romanian rural areas, we used the smallest rural administrative units with available statistical data, which in Romania are represented by rural local administrative units (LAU-2) known as ‘communes’. In Romania, a rural commune is usually designated as an administrative subdivision formed by one or several villages.

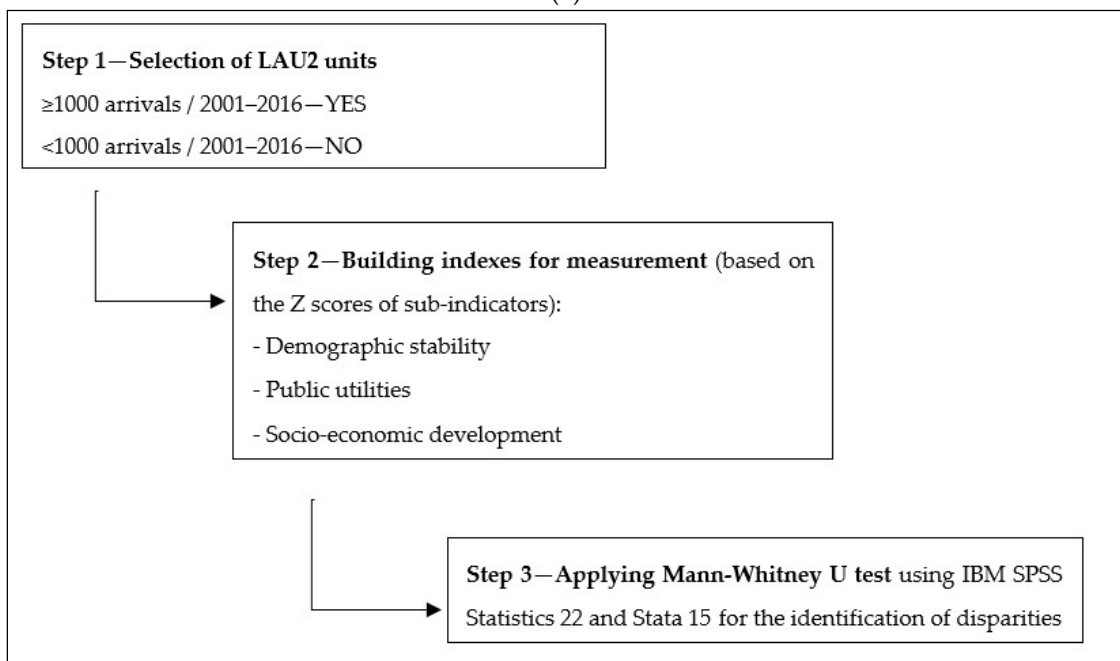
In order to verify the spatial impact of tourism activities upon the sustainable development of the rural areas, we distinguished two classes of rural localities (Figure 1a):

1. LAU-2 ‘communes’ that cumulated at least 1000 tourist arrivals between 2001 and 2016. This category is mainly associated with traditional Romanian tourist destinations such as the Carpathian Mountains (in Central Romania), the Black Sea seaside and the Danube Delta.
2. LAU-2 ‘communes’ with less than 1000 tourist arrivals (including those with no tourists at all) between 2001 and 2016.

The threshold of 1000 tourist arrivals was chosen because it represents an average of approximately 5 tourists per month received during the study period (2001–2016). We considered this value to be a minimal indicator of tourism development that allows a locality to be regarded as a destination.



(a)



(b)

Figure 1. (a) Distribution of rural localities with ≥ 1000 cumulative tourist arrivals for the period 2001–2016; (b) Detailed schema of methodological process.

Several indicators of sustainable development from rural localities with a cumulative value of at least 1000 tourist arrivals for the period of study were compared with the same indicators from rural localities with tourist arrivals below the threshold, or with no tourists at all, in order to identify the impact of tourism activities upon the sustainable development of the rural areas. We used indicators of tourism impact and sustainability from the European Tourism Indicator System (ETIS) list which are available in national statistics databases. The European Tourism Indicator System (ETIS) was launched in 2013 by the European Commission in order to help tourist destinations monitor their road towards sustainable tourism performance.

For the analysis, we built a list of three indexes of sustainability, each one built from several indicators and covering a different and complementary field:

1. Demographic stability
2. Public utilities
3. Socio-economic development

The choice of the indicators was motivated primarily by the available data on the Romanian Institute of Statistics but also on the relationship between the dimensions of sustainability (economic, social, and environmental) and tourism activities, according to the literature [91,92]. The list of indicators for each index analyzed is shown in Table 1 and a detailed schema of methodological process is shown in Figure 1b.

Table 1. Indicators used in the study

Indexes	Indicators	Abbreviation
Demographic stability 2001–2007	Total immigration (arrivals of domiciled individuals) related to population 2001–2007 Total emigration (departures of domiciled individuals) related to population 2001–2007	Dem_Stab_2001_2007
Demographic stability 2008–2016 ¹	Total immigration related to population 2008–2016 ¹ Total emigration related to population 2008–2016 ¹	Dem_Stab_2008_2016
Public utilities 2007	Length of running water supply infrastructure related to population 2007 Length of sewerage infrastructure related to population 2007 Length of natural gas network related to population 2007	Pub_Ut_2007
Public utilities 2016 ¹	Length of running water supply infrastructure related to population 2016 ¹ Length of sewerage infrastructure related to population 2016 ¹ Length of natural gas network related to population 2016 ¹	Pub_Ut_2016
Socio-economic development	Number of is employees related to population Number of unemployed related to population Share of tertiary sector	Soc_Ec

¹ Last year with available data.

Data Processing

Given the nature of the indicators, we had to normalize the variables and build the three indexes of sustainability based on the Z scores of the indicators. We considered the values of demographic stability and public utilities for two time periods: 2001 (the first year with full available statistical data on tourism on the Romanian Institute of Statistics)–2007, respectively 2008–2016 (the last year with full available statistical data on tourism on the Romanian Institute of Statistics) in order to verify differences in sustainability indicators in rural area after Romania’s integration into the European Union (EU). Our motivation is sustained by the fact that the integration facilitated the access of a new clientele to the Romanian rural destinations, induced a higher attractiveness for the rural LAU-2 and gave the possibility to thousands of rural localities to improve their sustainability indicators via European Funds. A split in the temporal framework of the analysis will also help us identify eventual shifts in tourism activities and sustainable development during the study period.

We used Mann–Whitney U test, also called Wilcoxon rank-sum—a nonparametric test of the null hypothesis which does not require the assumption of normal distribution—to determine whether two independent samples have the same distribution or not. A similar method, however based on independent *t*-test has been successfully used in a recent study on the Romanian rural area for the identification of the impact of the presence of World Heritage Sites on sustainable development indicators [49].

Data management and analysis were performed using IBM SPSS Statistics 22 (IBM Analytics, Armonk, NY, USA) and Stata 15 (StataCorp, College Station, USA). Comparisons between the two groups (rural localities with tourist arrivals and rural localities without tourist arrivals) were made using the nonparametric test Mann–Whitney U test for the identification of disparities in sustainable development indicators.

3. Results

Tourist arrivals in the Romanian rural area were registered mostly in mountain areas and on the seaside (especially in the Danube Delta), but also near urban centers that are known to have diverse attractions and functions. The main roads crossing the country have also favored transit tourism, remotely, small LAU-2s having received more than 1000 tourists during the considered time frame (Figure 1a). The results from the preliminary analysis of the comparisons are shown in the following tables and figures.

3.1. Demographic Stability

The distributions of the indicator demographic stability in the two groups (rural localities with tourist arrivals and rural localities without tourist arrivals) differed significantly for both periods: 2001–2007 (Mann–Whitney U = 531,299.5, $p = 0.000$) and 2008–2016 (Mann–Whitney U = 487,863, $p = 0.000$) (Table 2).

Table 2. Ranks and means for the indicators Dem_Stab_2001_2007 and Dem_Stab_2008_2016

	Tourism Destination	N	Mean	Mean Rank
Dem_Stab_2001_2007	No	2274	−0.0858	1371.14
	Yes	589	0.3314	1666.96
Dem_Stab_2008_2016	No	2274	−0.0885	1352.04
	Yes	589	0.3415	1740.71

For the 2001–2007 period (Figure 2), the overall analysis of z scores for demographic stability indicates the existence of a small connection between tourism activities and demographic stability in rural areas, especially in northern mountain areas and in the Western Carpathian chain. The Danube Delta and Apuseni Mountains seems to rank lowest from the tourism destinations group.

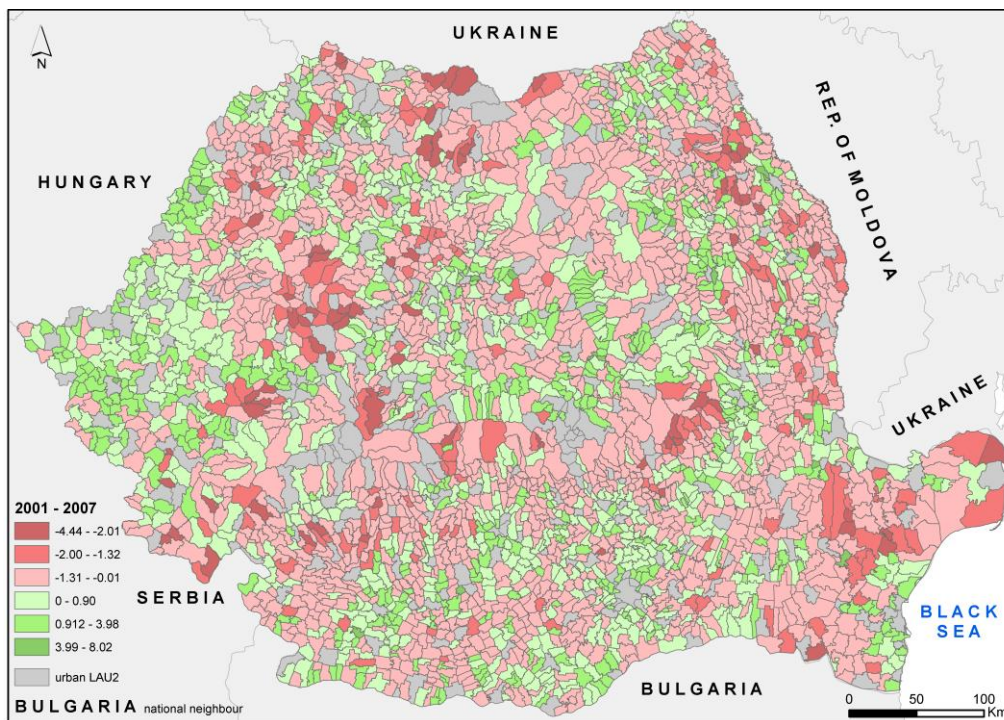


Figure 2. Distribution of z-scores for the indicator Dem_Stab_2001_2007.

The 2008–2016 timeframe captures the EU post-accession period and the distribution of z-scores indicates a better situation for rural tourist areas, in general (Figure 3). The Mann–Whitney tests results show that there is a significant relation between tourism activities and a higher attractiveness of rural localities for new residents. The z scores distribution confirm, surprisingly, the strong demographic stability of mountain areas, usually considered peripheral and sensitive.

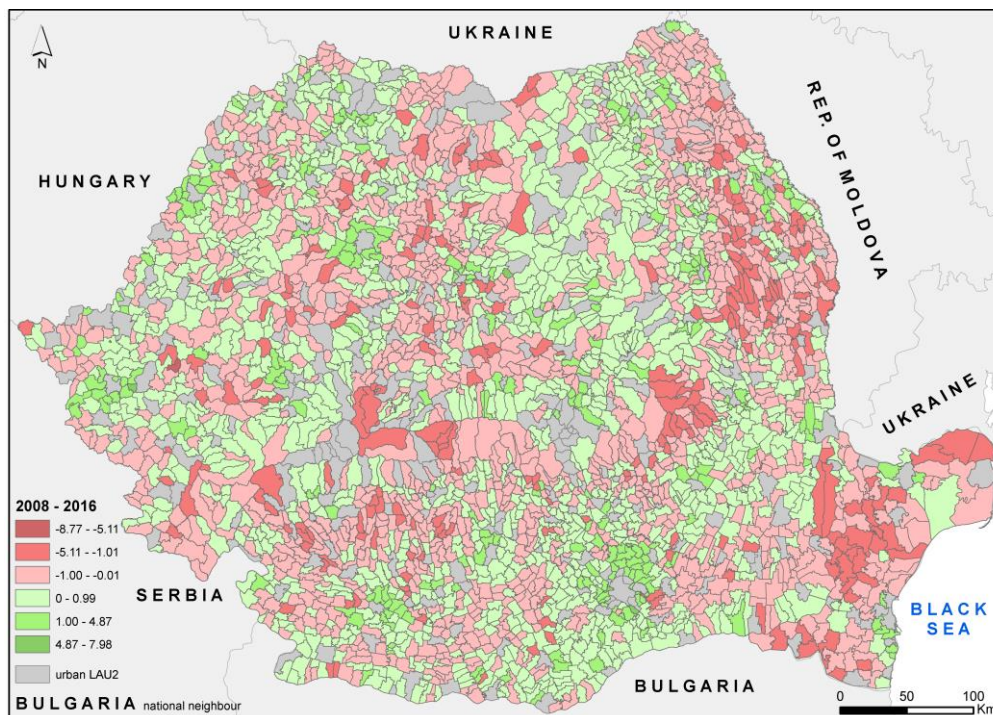


Figure 3. Distribution of z-scores for the indicator Dem_Stab_2008_2016.

3.2. Public Utilities

The distributions of the indicator public utilities in the two groups (rural localities with tourist arrivals and rural localities without tourist arrivals) differed significantly for both thresholds: 2007 (Mann–Whitney $U = 539,505$, $p = 0.000$) and 2016 (Mann–Whitney $U = 549,879.5$, $p = 0.000$) (Table 3).

Table 3. Ranks and means for the indicators Pub_Ut_2007 and Pub_Ut_2016

	Tourism Destination	N	Mean	Mean Rank	Sum of Ranks
Pub_Ut_2007	No	2274	−0.1089	1374.75	3,126,180.00
	Yes	589	0.4206	1653.03	973,636.00
Pub_Ut_2016	No	2274	−0.0722	1379.31	3,136,554.50
	Yes	589	0.2789	1635.42	963,261.50

For the first indicator, Pub_Ut_2007, it is obvious that tourism destinations from the intra-Carpathian area and around urban localities have had the highest values for the indicators of public utilities (Figure 4), a possible explanation for the differences recorded by the Mann–Whitney test. The central region of the country is showing higher values of public utilities indicators, given its higher urbanization share. Our study did not focus on the urban area, however, several rural localities benefit from the proximity of a medium or big city and improve their utilities.

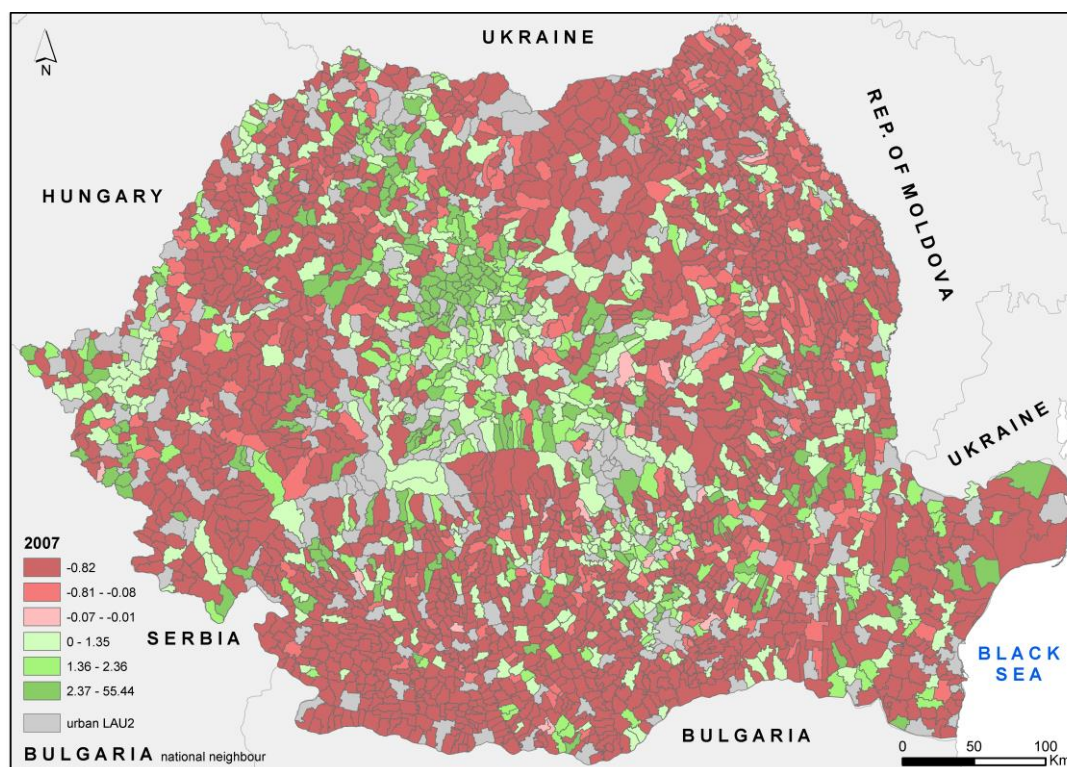


Figure 4. Distribution of z-scores for the indicator Pub_Ut_2007.

The spatial distribution of z-score for Pub_Ut_2016 shows that the rural areas around important Romanian urban centers (Bucharest, Timisoara, Constanta, Cluj-Napoca, Brasov) and in the inter-Carpathian area are the ones that have benefited the most from investments in the sector of public utilities. The year 2016 shows an overall improved situation, with rural tourist destinations having more spatially visible developed public utilities infrastructure (Figure 5).

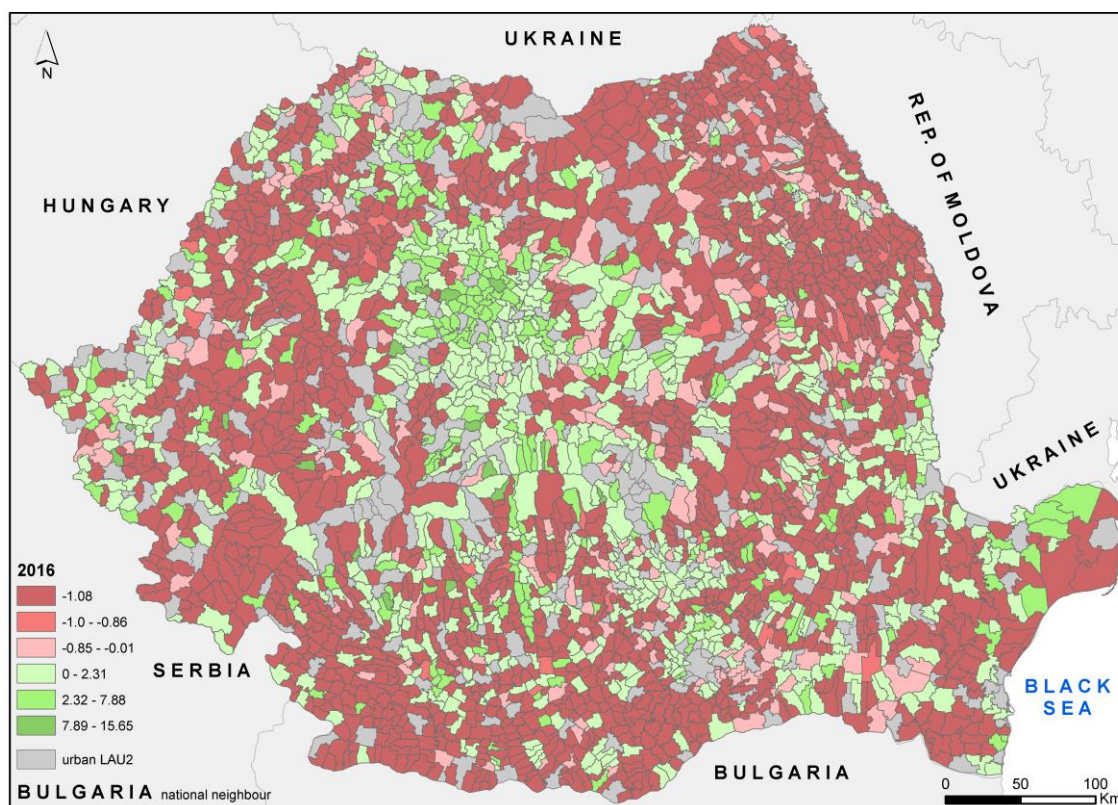


Figure 5. Distribution of z-scores for the indicator Pub_Ut_2016.

3.3. Socio-Economic Development

For the indicator Soc_Ec, due to lack of data for the threshold year 2007, we took into consideration for the Mann–Whitney test only the most recent data from 2016 and the latest census data. The distributions of the indicator socio-economic development in the two groups (rural localities with tourist arrivals and rural localities without tourist arrivals) differed significantly (Mann–Whitney $U = 465,341, p = 0.000$) (Table 4).

Table 4. Ranks and means for the indicator socio-economic development

	Tourism Destination	N	Mean	Mean Rank	Sum of Ranks
Soc_Ec	No	2270	−0.2099	1340.50	3,042,926.00
	Yes	589	0.8116	1774.95	1,045,444.00

The analysis of a connection between the rural economic development and tourist activities (Figure 6) shows that there is a significant difference between rural tourist destinations and the other localities. The z scores of socio-economic index are above the mean values for tourist localities that seem to have managed well the economic crisis. The western border line of Romania, the tourist mountain areas, the rural areas in close proximity of important national and international urban centers have scores above the mean values.

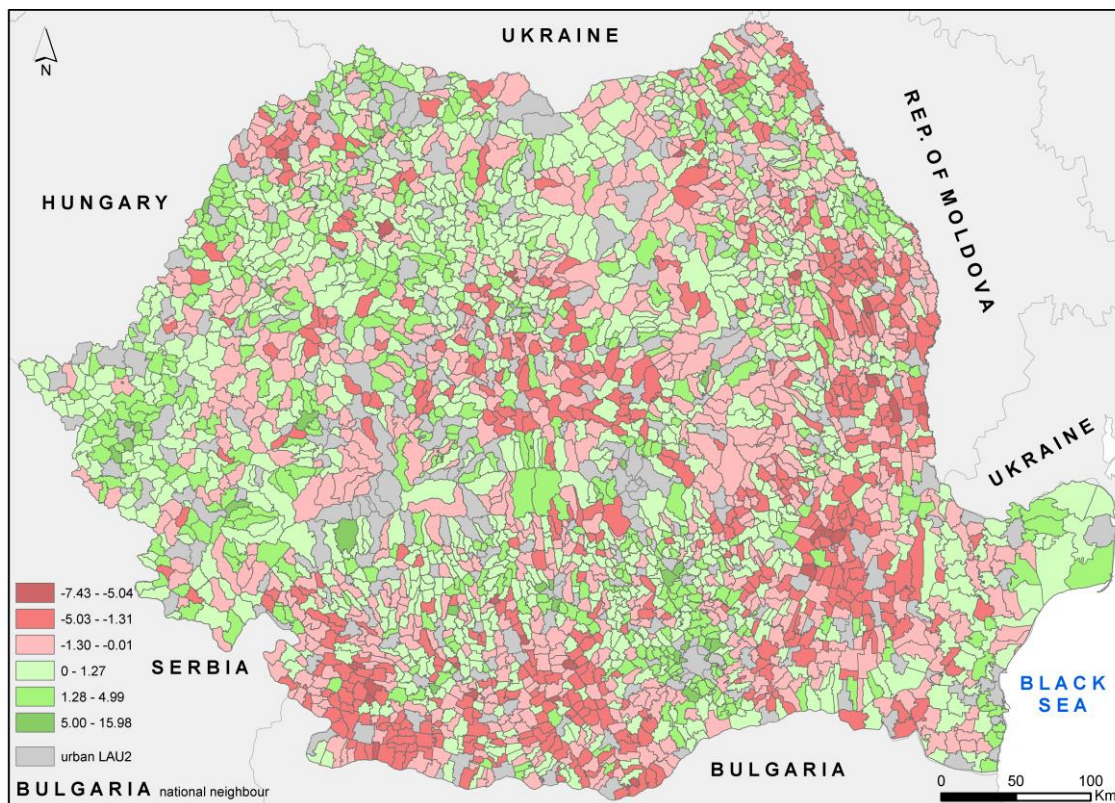


Figure 6. Distribution of z-scores for the indicator Soc_Ec.

Unemployment is a major topic of discussion in Romania and national policies regarding sustainable development are frequently debating this topic. Reducing unemployment and facilitating infrastructure development are also major goals of the EU Agenda for Sustainable Development, and are also included in the National Sustainable Development Strategy for Romania (NSDSR) 2013–2020–2030 [93]. Migration represents a major challenge in the post-communist Romania, with a major impact on rural areas, and NSDSR underlines the need for a better legislative and institutional framework for managing internal and external migration. As regards the share of population employed in tertiary sector, as an indicator of economy diversification in rural areas, it is providing an insight into the local opportunities for new and well-paid jobs, and an opportunity for stabilizing young population.

4. Discussion

Overall, the paper results confirm the supporting role of tourism on the sustainable development of rural localities in Romania, clearly differentiating the localities with stronger tourist activity from the others. This reinforces previous research findings regarding the positive effect of tourism on economic growth [11,12], demographic stabilization [13], and improvement of the residents' wellbeing [16,17].

Regarding the demographic stability, the statistical tests highlight significant differences between tourist destinations and non-tourist localities for all the indicators analyzed and a suggestion of better performances of sub-indicators such as immigration or emigration. Rural localities with more intense tourist activity have significantly higher scores for all the demographic indicators (see Table 2), which shows that they attract significantly more new residents compared to the localities with fewer or no tourist arrivals during the study time frame.

The Mann–Whitney U test results confirm the existence of an effect both before and after 2007, the year of Romania's accession to the European Union. These results demonstrate a significant relation between tourism activities and a higher local attractiveness for new residents. It also verifies the stabilizing role of tourism on the rural population's migration. The spatial differences were

stronger before 2007 and they have slowly decreased after this year (Table 2), when two major international changes occurred: the opening of Romania's borders towards Western Europe and the economic/financial crisis. They both stimulated the labor force migration and the financial crisis strongly affected people's quality of life and employment opportunities. During the crisis there were also some austerity measures that the Romanian authorities took to counter the crisis, with incomes cuts in the public sector that affected also the tourist arrivals. Both categories of localities became less attractive for new residents between 2007 and 2016, given that the economic crisis has stimulated the labor force's emigration, both internal and external; however, tourist destinations kept an edge on non-tourist localities. The differences in demographic stability remain significant for both periods. This indicates a stronger demographic resilience of the localities with higher tourist activity compared to other rural areas, visible even during the economic crisis and the emigration wave after the EU integration. The results show that tourism was one of the key factors, which, combined with EU instruments available for policy makers, from financial and macroeconomic policies to structural reforms [94] helped rural areas to recover faster.

These results are in line with several existing researches regarding the role of tourism in the demographic stabilization of rural areas by reducing outgoing migration and thus supporting sustainable development [13,21–23]. This effect is linked to the employment opportunities and higher incomes usually associated with tourism development [13,22], thus helping retaining a local labor force against the appeal of external migration.

These findings are very important, considering that this demographic stabilization seems to be shown in many isolated rural areas from the Carpathian Mountains and Danube Delta (Figure 3), being spatially extended after 2007. All these results can be further capitalized as a solution for stimulating the development of other rural areas, by increasing the investments in tourism image and activities.

For the public utilities, the Mann–Whitney test results (Table 4) show a similar significant difference between the two classes of localities as regards the sustainable development sub-indicators, such as: the length of drinking water network, the length of sewage network, and the length of gas supply. Clear differences in the mean z scores for the two types of localities are visible, with tourist destinations having an advantage (Table 3), this indicating a stronger development of public utilities in the rural tourist destinations, in opposition with other rural localities.

Overall, our study indicates a significant relation between the intensity of tourism activity and the development level of public utilities. Localities with tourist arrivals seem to be more invested in developing their utilities in order to satisfy and increase their tourists' numbers. Tourism has been previously associated with the modernization of local facilities and increasing living standards and quality of life of local communities [30,31] and similar effects of tourism on infrastructure development and the residents' general quality of life were observed in other countries, such as Serbia [68] or South Korea [17,28]. Our study confirms previous surveys on Romanian rural areas on the local residents' perceptions regarding the positive impact of tourism on their quality of life [16].

On the other hand, the major spatial variations in the distribution of z scores is a sign that tourism is not the only factor explaining the development of public utilities. The capacity of local administrations to access funding and investments is another major factor. However, centralized data at the LAU-2 level was not available for analysis.

For the socio-economic development indicator, according to Table 4, significant differences between tourist destinations and the other localities emerge, with values of z scores for tourist destinations again above the mean. Furthermore, the socio-economic development indicator shows that in Romania there was a higher socio-economic development and a stronger resilience after the economic crisis in rural localities with more intense tourist activity. This difference is also supported by the observations for the demographic stability indicators.

The differences in the level of rural economic development can be linked to the fact that tourism usually facilitates the creation of new job opportunities, development of handicrafts, and it represents an important source of income [12]. Similar relations between tourism and economic development have

been found in other countries such as Taiwan, Malaysia [30,31], Turkey [32], or in Eastern-European countries such as Serbia [68] and Poland [46,70]. A significant and long term relation between tourism and economic growth has been also identified in Latin America [24].

Furthermore, the differences could be linked to the role of tourism in increasing the tourism value of local agricultural products, thus stimulating the development and/or specialization of agriculture in rural destinations [14,15] and, in a lesser manner, the tertiary sector, as observed in other studies [18].

Considering all three impact indexes analyzed, we can say that, in Romania's case, tourism seems to meet the general expectations regarding its role in supporting the development of rural areas [3–5], stimulating a higher sustainable development compared to the localities with few or no tourists. This implies that tourism could represent a real chance for many Romanian sensitive rural areas confronted with socio-demographic and economic issues, such as isolation, economic decline, or depopulation. Many of these localities conserve a traditional life and with a good capitalization or promotion of their cultural and natural assets, they could attract tourists. This opportunity is enhanced by the increasing visitors' interest towards authenticity, manifested worldwide in recent years.

However, it should be kept in mind that the proximity of urban centers also has a strong impact, both in terms of tourist arrivals and in terms of demographic, economic, and public utilities values.

5. Conclusions

The overall aim of this study was to identify the existence of a positive impact of tourism upon Romanian rural areas and to verify the existence of a significant relation between the existence of tourism activities and the levels of sustainable development.

The study contributes to a large body of literature that includes many research approaches and various results regarding the role of tourism in the sustainable development of rural areas. Some of the existing studies have found positive social [11–13,19,23], cultural [26–28], and economic effects [16,23,24,26,29], whilst others have found negative [32,37,39,50], dual [38], inconclusive [12,40,41], or spatially differentiated effects [43,44].

In this framework, our paper represents one of the very few approaches on this topic for Romania and the first quantitative research that brings real evidence regarding a significant relation between tourism activities and rural development.

First, Mann–Whitney U test statistical tests have demonstrated a clear and significant difference in the demographic stability and attractiveness between rural tourist destinations and other localities with less or no tourist activity. The results from the Romanian rural areas are in line with similar findings from some Southern Greek Islands [23], Finland [22], Ukraine [21], and other countries that have found a similar stabilizing effect on the local demographic structure. The study brings new empirical evidence regarding the relation between the intensity of rural tourism activity and the villages' attractiveness for new residents. Tourism has reduced outgoing migration even after the EU integration and during the economic crisis. Unlike the Greek case [23], this positive effect has been manifested for more than 15 years, enduring the international economic and political changes that occurred after 2007.

Second, tourism development differentiates the development of public utilities and economic development in Romanian rural areas. It has created better job and income opportunities even during the economic crisis.

The research findings confirm the contribution of tourism to a sustainable development of sensitive rural areas. These results answer previous researches and policy expectations regarding the stimulating role of tourism on the diversification, economic transition, and sustainable growth of rural economies [33–36,59,66], especially for the post-communist European countries, as their chance for a better integration [46].

Given the higher sensitivity attributed to most of the Romanian rural areas, tourism seems to be a real opportunity for stimulating growth and sustainable development. Tourism cannot completely solve every problem of rural areas and it is obvious that its impact varies spatially according to local

contexts. However, overall, we can sustain that, in Romania, tourism development is associated with a stronger demographic stabilization, better employment opportunities, and faster development of public infrastructure.

These research findings are the first to confirm the role of tourism in supporting the socio-economic development of rural areas in Romania. They could have major implications at political level in the shaping of future national policy and rural development plans. With strategic investments adapted to local contexts, tourism could really contribute to the sustainable growth of Romanian rural areas, changing their overall image and attractiveness.

Methodologically, the contribution of our paper was to suggest a new technique for the identification of differences in various indicators between similar localities distinguished only by a dummy variable, even in a non-parametric distribution.

The main limitations of this study are mostly linked to the available official data in the Romanian statistics at LAU-2 level. There are very few indicators of sustainable development available and most of them are linked to social sustainability. Therefore, it was not possible to analyze in a deeper manner the economic and environmental dimensions of sustainability in Romanian rural areas. This would require a revision of national statistics and data registration, which already happens at a county level. There is also very poor data regarding sustainable development at LAU-2 level that corresponds to the ETIS indicators, deficiency which does not allow comparisons to other countries.

The research results indicate significant differences between the two categories of rural localities analyzed. However, we cannot claim that there are further differentiations among the communes with more than 1000 tourist arrivals between 2011 and 2016 linked to various factors such as tourist tradition. Future studies should explore this aspect.

Another direction for future research is to analyze the role of other factors that, together with tourism, contribute to sustainable rural growth. New spatial and economic indicators, such as accessibility, could be further analyzed in relation with the development of tourism in rural areas.

Author Contributions: All four authors contributed equally to the development of the framework and writing of the manuscript. B.-C.I. managed the coordination process and worked on the literature review, methodology, and Mann–Whitney U test. O.M.S. worked on literature review, results interpretation, and discussions. A.M. was responsible for figures, databases, and copyediting. C.I. worked on the literature review and interpretation.

Funding: All costs for publishing in open access were covered by the Department of Geography within the Faculty of Geography and Geology, Alexandru Ioan Cuza University of Iasi, Romania.

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

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