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RELATION BETWEEN TYPOLOGIES OF AGRITOURISM IN ITALY AND AGRITOURISTS ASPIRATIONS

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Abstract

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The agritourism is a good chance for farmers to implement their source of income and to solve socio-economic rural marginalization in Italian countryside due to the out-migration. Italian tourists and many of them coming from abroad have specific needs and requirement towards the agritourism. Recently there has been a rise of several rural assets such as recreational, cultural and sports activities, connected to the rurality and to the rural space. In the same time there has been a significant increase of agritourisms in rural areas as a consequence of a growth of farms able to produce certified quality foods, which have attracted a multitude of people in Italian agritourisms.

The aim of this paper was to investigate from 2003 to 2013 the evolution of the Italian agritourisms and to detect if there was a nexus among presences in farm holidays farms and the variables growth of farms able to produce certified quality food and farms able also to offer cultural, recreational and sports activities linked to the rural space. The quantitative model has stratified the dataset in two clusters in function of the provenance of agritourists from Italy and from abroad.

Findings have pointed out some main relations between typologies of agritouristic offered services in farms and the presence in agritourism. The Italian agritourists and also foreign agritourists have been sensitive and very demanding to farms able to produce certified quality foods and to offer cultural, recreational and sport activities in agritourisms.

Key words: rural tourism, multiple regression model, rurality, certified quality food, Kohonen's maps

Introduction

In Italy over the last twenty years, as a consequence of the implementation of regional and national laws and regulations about rural tourism, there has been a significant increase of agritourisms able to offer hospitality, to dish up food by agricultural catering services in farms and to propose cultural, sports and recreational activities linked to the rurality.

A literature review has pointed out as it is not so easy to find out uniqueness in the definition of the agritourism and rural tourisms in different countries and in the same time different are services and activities offered in farms towards agritourists (Sznajder et al., 2009; Phillip et al., 2010).

Since the early 1990s, there has been in Italy a differentiation of agricultural activities in farms with direct effects on the environment and with the production of positive externalities (Ohe and Ciani, 2011) as a consequence of the transition from a productivity model to a post-productivity one (Ilbery, 1998). In the same time urban people are seeking certified quality food tightly connected to the rural context giving value to the rurality by a rural tourist aimed at contrasting the globalization (Mattiacci and Vignali, 2004).

Several Italian regions with a significant endowment in terms of natural resources, which are in near proximity of the most famous tourist centers, famous consolidated cultural heritages and close to deep-rooted Italian eno-gastronomic realities, have enhanced a growth of agritourisms, emphasizing the specific role of an agrarian cultural identity able to reduce the socio-economic marginalization in the countryside (Contini et al., 2009).

Reasons on the development of farm productive diversification by agritourism, organic farming and certified quality foods are different but all of them have been focused in a perspective of increasing and strengthening the role of farms in

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the rural development process, in reducing farmer's income squeezing (Van der Ploeg et al., 2002) and in reinforcing the environment protection by positive externalities (Van der Ploeg, 2006).

In general farm size is an important factor influencing a process of productive differentiation by agritourism activity and secondly farm efficiency (Galluzzo, 2013). Scholars have pointed out as the hospitality in farms such as rooms or apartments are scattered in rural areas where there is a significant diffusion of agritouristic activities aimed at stabilizing the farmer's source of income (Ohe and Ciani, 1998). This has implied important changes in the management of farm holidays farms and in the governance of Italian farms in particular in less favored rural territories.

The agritourism and certified quality foods have led the Italian primary sector towards a development, formally recognized by specific national laws and regional regulations, of rural districts and agricultural quality food districts (Galluzzo, 2010a) with positive effects in favor of the multifunctionality in the primary sector (Galluzzo, 2014; Galluzzo, 2010b; Galluzzo, 2008a). Rural districts specifically are able to emphasize the multifunctionality in the primary sector giving value towards the agritourism and rural cultural activities in farms by a rediscover of the countryside and their own features. Comparing several Italian regions, such as Tuscany, Umbria and Latium as well, certified quality foods and agritourism are two important pillars in order to implement the level of income in farms and the value of tangible and intangible assets in a rural territory (Sonnino, 2004; Galluzzo, 2008a) with positive effects on the growth of rural districts (Galluzzo, 2006; 2008b; 2008c; 2009a).

After the transition from a productivist agricultural model to a post-productivist one (Ilbery, 1998) the role of farmers is become pivotal in the protection of the countryside by the multifunctionality hence, the agritourism is nowadays considered one of the most important pillar in order to implement the multifunctionality, generating local rural networks, tightly connected to the local traditions and rural crafts (Ventura and Milone, 2000).

The Rural Development Plan has been since the early 2000s a fundamental financial tool to transform the role of farmer readdressing the agritourism in rural areas by an allocation of specific financial subsides aimed also at implementing the rural diversification by other rural activities such as rural tourism and agritourism (Galluzzo, 2008c). This latter has a potential positive advantage in giving value to agricultural productions and local food because of a good high willingness to pay by agritourists to taste and to buy certified quality food tightly connected to the countryside and to its eno-gastronomic traditions (Galluzzo, 2008c; Clemens, 2004). The agritourism is a shining example of rurality preservation in the countryside by a sustainable green tourist perspective emphasizing throughout certified quality foods, organic foods and tourism the rurality (Privitera, 2009). Agritourism preserves also rural lifestyle and landscapes strengthening rural local networks, rural culture, agricultural heritage, food and eno-gastonomic traditions (Ventura and Milone, 2000).

Aim of the Research

The main question in this paper was to detect if the typology of services offered by Italian agritouristic farms such as offer horse riding activity, excursion, naturalistic activity, trekking, mountain bike, courses in rural topic and other different sports activities have influenced the flow of presences in agritourisms. The model of analysis has stratified the dependent variable presence of agritourists in two clusters: one made up by tourists coming from the domestic market and another one made up by tourists coming from abroad.

This research has sought to investigate, in all Italian regions, during ten year time 2003-2013, with two quantitative approaches, such as the multiple regression model and the Kohonen's maps or self-organizing maps, the first and foremost relations between the dependent variable, presence of foreign agritourists and Italian agritourists and the independent variables as growth of farm holidays farms and the diversification of rural tourism activities in the countryside as farmhouse with bed, catering services in agritourisms and the growth of farms able to offer a tasting service of local food, cultural, recreational and sports activities linked to the rurality and the expansion of farms able to produce certified quality foods.

Agritourists have specific needs and requests towards farm holidays farms, hence the competitiveness of them depend on the variety and quality of services offered by farmers and it is a function of the capabilities of farmers to be sensitive to the needs and aspirations of agritourists (Privitera, 2009). Furthermore, some scholars have investigated as the development of agritourism is directly correlated to the diffusion of local certified foods highlighting a nexus between food and wine (Sidali et al., 2011) giving to farmers a pivotal function in protecting local eno-gastronomic traditions and the agrarian landscape through agritourism (Sidali et al., 2011) becoming dwellers of rurality. Italian agritourists and agritourists coming from abroad have different aspirations and requests in terms of cultural, recreational and sports activities to be satisfied during their staying in farm holidays farms (Sidali et al., 2011). A large percentage of Italian guests uses farms in a similar way of an hotel in order to sight-seeing other places (Lo Surdo, 1988; Galluzzo, 2006; 2009a; 2009b) putting in

several cases in connection place to food and agricultural traditions; instead international guests prefer relaxing in farms by the agritourism using farm's facilities (Lo Surdo, 1988) and tasting traditional Italian foods as well.

Methodology

In the first stage of the quantitative methodology we have utilized a multiple regression model. The estimation of parameters has used an Ordinary Least Square (OLS) by the open source software GRETL 1.8.6. In its algebraic form of matrix, the multiple regression models can be so expressed (Verbeek, 2006):

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

where **y** is a dependent variable and ε is the error but both are vectors with n-dimensions **X** is an independent variable which has dimension n x k.

In analytical terms, the model of multiple regressions in its general formulation can be written in this way (Andrei and Bourbonnais, 2008; Asteriou and Hall, 2011; Baltagi, 2011):

$$y = \alpha_0 + \alpha\, x_1 + \beta\, x_2 + \gamma\, x_3 + \delta\, x_4 + \varepsilon_{jt} \quad (2)$$

y are the presence of Italian agritourists or foreign agritourists, α_0 constant term, x_1, x_2, x_3, x_4, x_5, x_6, x_7 – Independent variables in terms of number of farms stratified in function of the typology of cultural, recreational and sports activities offered in favour of guests in agritourisms, α, β, γ, δ – estimated parameters of the model, ε_{jt} is the statistic error.

In order to reduce the variability in dependent and independent variable we have used the logarithmic transformation of variables in the regression model. This transformation is a very common way to handle particular cases where there are non-linear relationships between the independent and dependent variables. Another purpose about the use the logarithmic transformation of data is to change a highly skewed variable into one normal function. The multiple regression log-log models are written:

$$\ln Y_i = \beta \ln x_1 + \upsilon \ln x_2 + \gamma \ln x_3 + \delta \ln x_4 + \rho \ln x_5 + \tau \ln x_6 + \omega \ln x_7 + \varepsilon_{jt} \quad (3)$$

Y is the dependent variable in terms of Italian agritourists or agritourists coming from abroad, β, υ, γ, δ, ρ, τ, ω are parameters in the model, x_1 is the numbers of farms able to offer horse riding activity,

x_2 are the farms with excursion activity, x_3 are the farms with naturalistic activity, x_4 farms able to offer trekking activities, x_5 farms able to offer mountain bike activities, x_6 are agritourisms able to arrange courses in rural topic, x_7 are agritourisms with different sports activities, ε_{jt} is the error term.

Basis assumptions, to use a multiple regression model, are (Asteriou and Hall, 2011; Baltagi, 2011):

- statistic error *ui* has conditional average zero that is $E(ui|Xi) = 0$;
- (Xi, Yi), $i = 1...n$ are extracted as distributed independently and identically from their combined distribution;
- *Xi*, *ui* have no fourth moment equal to zero.

There is no correlation among regresses and random noise if the value between β expected and β estimated is the same; in order to analyze if there is heteroscedasticity on standard errors, it has used White's Test on the error terms (Verbeek, 2006).

The second stage of the quantitative analysis has investigated in all Italian regions the diffusion of agritourism, the presences of agritourists coming from Italy and from abroad, the development of farms producing certified quality foods and the different farm holidays farms stratified in function of their offered services through the Self Organizing Maps (SOM) proposed by Kohonen (Kohonen, 2001). In order to estimate the parameters one has utilized the open source software SPICE-SOM and the software Orange Canvas aimed at finding if there is a unique winner neuron over the time of study in Italian agritourisms and in all variables utilized in the model.

In general Self-Organizing Maps are particularly useful to estimate in time series the structure and the evolution of some variables obtaining a unique parameter summarizing different variables and by the visualization of different clusters (Kasky and Kohonen, 1996; Mehmood et al., 2011). General speaking, the black and grayish hexagons are zones where there is the highest level of clustering close to the winner neuron and the white ones are the opposite or rather neurons far away from the winner neuron (Kohonen, 1984). Few scholars have proposed a GTM methodology (Generative Topographic Map) which is an alternative to the SOM maps (Bishop et al., 1998) able to highlight the best winner neuron in a network of relations.

The self-organizing map (SOM) or Kohonen's maps are based on a method of unsupervised learning process in a limited sized space provided that the topological properties of an input space or stimulus come from the outside (Kohonen, 2001). The main advantage of the SOM is to obtain an unique pattern able to classify homogenous clusters preserving their dissimilarities (Kohonen, 1984). In the same time, the purpose of the self-organizing maps is similar to the Principal Component Analysis, reducing the complexity in a dataset and visualizing in an unique map the best neuron and the main relations among variables (Mehmood et al., 2011).

The self-organizing map is a neural network where each artificial output neuron is arranged in grids based on a lower dimension in connection to all neurons of input (Haykin, 1999) such as independent variables in terms of number of farms classified in function of the typology of activities in favour of guest in agritourisms. The output variable was the presences in agritourisms stratified in function of their origin in terms of number of guests from Italy and from abroad.

Each input or stimulus is connected to other neurons of the output by a weight vector assessed in order to define the position of a centroid in the space (Lucchini, 2007). The weights assigned to the neurons are initialized either as random numbers or as small values sampled uniformly from a subspace crossed by two wider eigenvectors main components hence, initial weights are a good approximation of the weights in the SOM (Kasky and Kohonen, 1996).

In general this network in the SOM is characterized by a pattern in two layers, one layer is made up by input and the other layer commonly called Kohonen layer is constituted by output (Kohonen, 2001). The neurons of the two layers are completely connected to each other, while neurons of the output layer are in connection to a neighbourhood made up by different output neurons (Kohonen, 1984). In the layer of output neurons there is an unique winner neuron, or winner neuron that takes all; hence, as a consequence of a system of interactions of lateral inhibitions and excitations in function of the distance from the winner neuron some neurons close to the winner are exited and other neurons, more distant from the winner neuron, are inhibited generating a function similar to a Mexican hat (Kohonen, 1984). The lateral interactions close to the winner neuron in the output layer are functions of the distance: excited neurons are closer to the winner; instead other neurons far away from the winner consequently are inhibited.

In our case study the training of neurons has used the competitive learning; the model has utilized an input training sample towards the network and the Euclidean distance among input and output neurons is calculated from all weight vectors (Kohonen, 2001). The neuron with weight vector most similar to the input is called the Best Matching Unit (BMU) and the weights of the BMU and neurons near to it in the SOM lattice (Kohonen's map) are the closest to the input vector. The intensity of the approach process decreases over time and it is in function of the distance of neurons from the BMU (Kohonen, 2001). In this simplified competitive network the winner neurons have a value equal to the value 1 if the input neurons are close enough to the BMU and 0 otherwise. The magnitude and the level of excitation or inhibition of different weights in neurons are a function of their geometrical distance between neurons on the lattice generating a typical function like a Mexican hat whose values are included in a range from 0 to 1 (Kohonen, 1984; Kasky and Kohonen, 1996).

Results and Discussion

The quantitative approach has underlined as there has been a localization and specialization of rural districts in areas where there is a significant concentration of agritourisms and certified quality food. In fact, in general the growth of agritourisms has concerned some Italian regions where high quality and certified quality foods are deep-rooted on well defined rural spaces such as Tuscany and Umbria and the rurality is in the general imaginary an unreplaceable trinomial concept food-tourism-countryside.

The multiple regression model has emphasized that differences exist between the presence of foreign and Italian agritourists and their aspirations towards farms holidays farms. The consequence is that the decision patterns of agritourists is influenced by the typology of farm holidays farms in terms of their complementary offered services such as sports, mountain bike, trekking and horse riding. In particular, findings have pointed out as the agritourists are very sensitive towards different typologies of agritouristic activities feasible in farms and also to the diffusion of farms able to offer quality foods in the rural context.

The first model based on a lin-log regression has highlighted as the presence of Italian tourists in farm holidays is sensitive to the different complementary services offered in farms; in fact, findings have highlighted as farms able to offer horse riding, excursion, mountain bike and opportunities to play sports in a rural context have acted on the dependent variable Italian presences in agritourisms (Table 1). The multiple regression model has also pointed out as the sports activities, horse riding and the diffusion of other activities such as mountain bikes have directly influenced and implemented the presences of Italian agritourists. Farms able to offer other activities as trips and excursions are correlated to the number of Italian agritourists in agritourisms. Statistical tests have underlined in time series an absence of heteroscedasticity and a normal distribution of the errors in the multiple regression model.

The application of the log-lin multiple regression model has pointed out as the presence of Italian agritourists has been affected by the variables able to have a direct correlation to some activities in farm as mountain bike, rural courses and recreational activities with a link to the rurality and to some other opportunities to play sports (Table 2). In this case statistical tests have shown in the time series of analyzed data an absence of heteroscedasticity and also a lack of autocorrelation with errors distributed in the normal way.

Table 1
Main results of lin-log multiple regression model. Depend variable is Italian presences in agritourisms (*Source: elaboration on data www.istat.it. Tourism statistics*)

Dependent variable	Coefficient	Standard error	t value	p-value	significance
Ln horse riding activity	1.48004	0.383643	3.8579	0.01818	**
Ln trips and excursions	-1.60624	0.527084	-3.0474	0.03812	**
Ln naturalistic activity	0.113408	0.0907117	1.2502	0.27937	n.s.
Ln trekking	-0.192471	0.36691	-0.5246	0.62761	n.s.
Ln mountain bike activities	0.798877	0.354855	2.2513	0.08752	*
Ln class about rurality	-0.138235	0.0819822	-1.6862	0.16704	n.s.
Ln sport activities	1.53552	0.19158	8.0150	0.00131	***

*** 1%; ** 5%; * 10%; n.s. not significant

Table 2
Main results of log-lin multiple regression model. Depend variable is log Italian presences in agritourisms (*Source: elaboration on data www.istat.it. Tourism statistics*)

Dependent variable	Coefficient	Standard error	t value	p-value	significance
Horse riding activity	0.00662318	0.00313233	2.1145	0.10198	n.s.
Trips and excursions	-0.00173406	0.00185814	-0.9332	0.40354	n.s.
Naturalistic activity	-0.000482102	0.00246763	-0.1954	0.85463	n.s.
Trekking	-0.00240768	0.002701	-0.8914	0.42309	n.s.
Mountain bike activities	0.00456185	0.00139943	3.2598	0.03109	**
Class about rurality	-0.00219247	0.000457676	-4.7904	0.00871	***
Sport activities	0.0015829	0.00029956	5.2841	0.00615	***

*** 1%; ** 5%; n.s. not significant

The multiple regression model with logarithmic transformation of all variables has highlighted as the presence of agritourists coming from abroad in Italian farm holidays has never been influenced by the diversification of agritouristic services in farms such as horse riding and trekking (Table 3). Statistical tests have highlighted in time series the absence of heteroscedasticity and errors distributed as a normal function.

The application of lin-log multiple regression model has pointed out as presences of agritourists coming from overseas in Italian farmhouses have been affected by the diffusion of farmers able to offer courses with a nexus to the rural topics and to agricultural aspects, the diffusion of facilities to play sports and other outdoor activities such as mountain bike (Table 4). Statistical tests have pointed out in the time series an absence of heteroscedasticity and autocorrelation with errors distributed like a Gaussian function.

The next stage of the quantitative analysis has expanded the database of analyzed variables by the introduction in the quantitative model of the variables such as number of active farms, farms able to produce certified quality foods, farms with a service of food tasting, farm holidays farms with catering services, agri-camping and agritourisms able to offer accommodation activities in rooms or in furnished bed-sitting rooms. The analysis in the multiple regression model has pointed out as the presence of Italian agritourists, in terms of logarithmic transformation, has been directly correlated to the farms able produce certified quality foods, with the independent variable farms able to offer a food tasting service and catering and by the spread of farms with agri-camping services (Table 5). Statistical tests have pointed out in the time series the absence of heteroscedasticity and autocorrelation with errors distributed like a Gaussianan function.

The analysis using the multiple regression model has pointed out as the presence of foreign agritourists after a logarithmic transformation have had the same impact in Italian agritourists; in fact, in the model has highlighted as the presence of Italian agritourists has had an impact on farms able to produce certified quality food, on farms able to offer a service of tasting of products and also to offer also catering services and diffusion of farms able to perform activities agri-camping (Table 6). Statistical tests have pointed out in the time series the absence of heteroscedasticity and errors distributed in the normal way.

Table 3
Main results of lin-log multiple regression model. Depend variable is foreign presences in Italian agritourisms (*Source: elaboration on data www.istat.it. Tourism statistics*)

Dependent variable	Coefficient	Standard error	t value	p-value	significance
Ln horse riding activity	-0.244883	1.15189	-0.2126	0.84204	*
Ln trips and excursions	-0.0170786	1.51974	-0.0112	0.99157	n.s.
Ln naturalistic activity	0.0683217	0.187485	0.3644	0.73400	n.s.
Ln trekking	1.35467	1.11822	1.2115	0.29239	*
Ln mountain bike activities	0.177751	0.874731	0.2032	0.84889	n.s.
Ln class about rurality	-0.278725	0.200314	-1.3914	0.23648	n.s.
Ln sport activities	0.882498	0.638097	1.3830	0.23885	n.s.

* 10%; n.s. not significant

Table 4
Main results of lin-log multiple regression model. Depend variable is logarithmic foreign presences in Italian agritourisms (*Source: elaboration on data www.istat.it. Tourism statistics*)

Dependent variable	Coefficient	Standard error	t value	p-value	significance
Horse riding activity	0.00582594	0.00345077	1.6883	0.16662	n.s.
Trips and excursions	-0.00153017	0.00202395	-0.7560	0.49171	n.s.
Naturalistic activity	-0.000326891	0.00245046	-0.1334	0.90032	n.s.
Trekking	-0.00171302	0.00300357	-0.5703	0.59896	n.s.
Mountain bike activities	0.00455797	0.00151316	3.0122	0.03946	**
Class about rurality	-0.00241996	0.000533403	-4.5368	0.01052	**
Sport activities	0.0014999	0.000354391	4.2323	0.01335	**

** 5%; n.s. not significant

Table 5
Main results of multiple lin-log regression model. Depend variable is logarithmic Italian presences in agritourisms (*Source: elaboration on data www.istat.it. Tourism statistics and Italian statistical yearbook*)

Dependent variable	Coefficient	Standard error	t value	p-value	significance
Italian agritourisms	0.00309118	0.00279853	1.1046	0.31964	n.s.
Farms producing certified quality food	-0.000227326	8.90784e-05	-2.5520	0.05114	*
Agritourism with food tasting	0.00670118	0.00129459	5.1763	0.00354	***
Agritourism with catering	-0.00798373	0.000757309	-10.5422	0.00013	***
Lay-by in agritourism	-0.0023538	0.000349715	-6.7306	0.00110	***
Agritourism with bed	0.00276653	0.00346002	0.7996	0.46024	n.s.

*** 1%; * 10%; n.s. not significant

Table 6
Main results of multiple lin-log regression model. Depend variable is logarithmical foreign presences in agritourisms (*Source: elaboration on data www.istat.it. Tourism statistics and Italian statistical yearbook*)

Dependent variable	Coefficient	Standard error	t value	p-value	significance
Italian agritourisms	0.00392952	0.00237419	1.6551	0.15881	n.s.
Farms producing certified quality food	-0.000203421	7.53799e-05	-2.6986	0.04286	**
Agritourism with food tasting	0.00652234	0.00119457	5.4600	0.00280	***
Agritourism with catering	-0.00781685	0.000727274	-10.7481	0.00012	***
Lay-by in agritourism	-0.00240618	0.000341323	-7.0496	0.00089	***
Agritourism with bed	0.00160544	0.00289208	0.5551	0.60273	n.s.

*** 1%; ** 5%; n.s. not significant

The analysis of Kohonen maps, using the software SPICE-SOM, has highlight that in 2013, 2009 and 2003 there has been a higher incidence of the variables considered in the development of agritourism activities such as farms able to produce certified quality food and different typologies of activities and services offered by agritourism (Figure 1). The worst results are underlined in 2012, 2011 and in 2006 due to economic crises which has reduce the flow of tourists hence, the agritourism is sensitive to contextual factors. Focusing the attention on the variables growth of Italian agritourisms and farms able to produce certified quality food it is possible to point out as in the two year time 2008-2009 there was a greater growth of farm holidays farms (Figure 2); unfortunately, comparing the development of agritourisms and farms able to produce certified quality food it is possible to observe a slight non-synchronous growth between these two typologies of farms offering agritouristic activities and a production of certified quality foods.

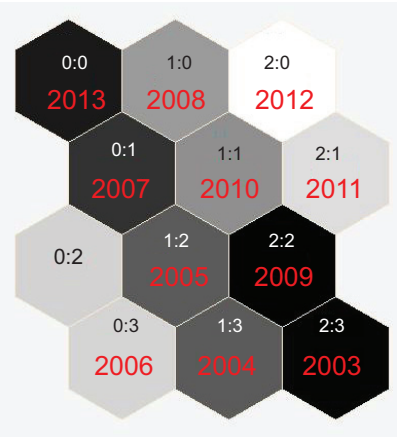


Fig. 1. SOMs considering all analysed variables with a nexus to the growth of agritourisms, typologies of included services and farms producing certified quality food *(Source: elaboration on data www.istat.it .Tourism statistics and Italian statistical yearbook)*

The spread of agritouristic farms able to offer any other activities has been particularly important in two years such as 2011 and 2007 (Figure 3); in fact, in those years there was a higher incidence of this type of farms able to diversity their services in agritourism. In 2012 sports activities and other courses with a nexus to the rurality did not have a remarkable expansion (Figure 3). Comparing the presences in agritourisms due to the flows of tourists from abroad and from the domestic market, utilizing the Kohonen's maps, it is possible observe as there has been a greater increase of tourists in three year time 2003, 2007, 2008 and partially in 2012 (Figure 4); findings have pointed out as the agritourism have a more ability in attracting agritourists predominately from Italy than from abroad which is a consequence of proximity effect of Italian agritourism in attracting domestic tourists.

The variable presence of Italian and foreign tourists has pointed out as the situation is quite delineated with less rooting of Italian tourists than foreigners and an high growth there has been over the time (Figure 4) and specifically since 2003. The presence of agritourists coming from abroad has increased and implemented in 2013 as a consequence of the lessening in economic crises specifically in the European Union.

Using the software Orange Canvas it has been possible to compare in the same graph two variables such as pres-

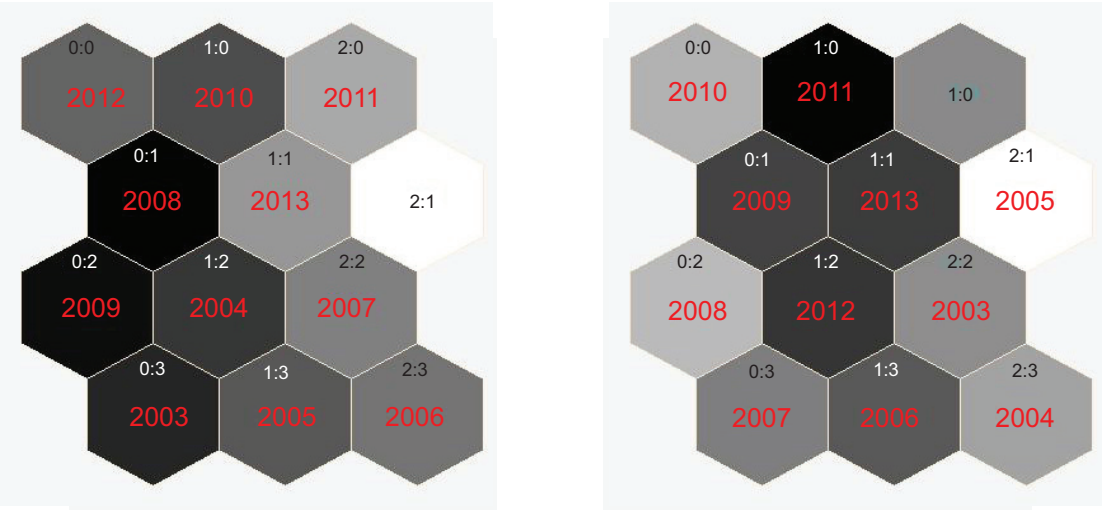


Fig. 2. Kohonen's maps about the growth of agritourisms (on the left) and farms producing certified quality (on the right) over the time of study (*Source: elaboration on data www.istat.it. Tourism statistics and Italian statistical yearbook*)

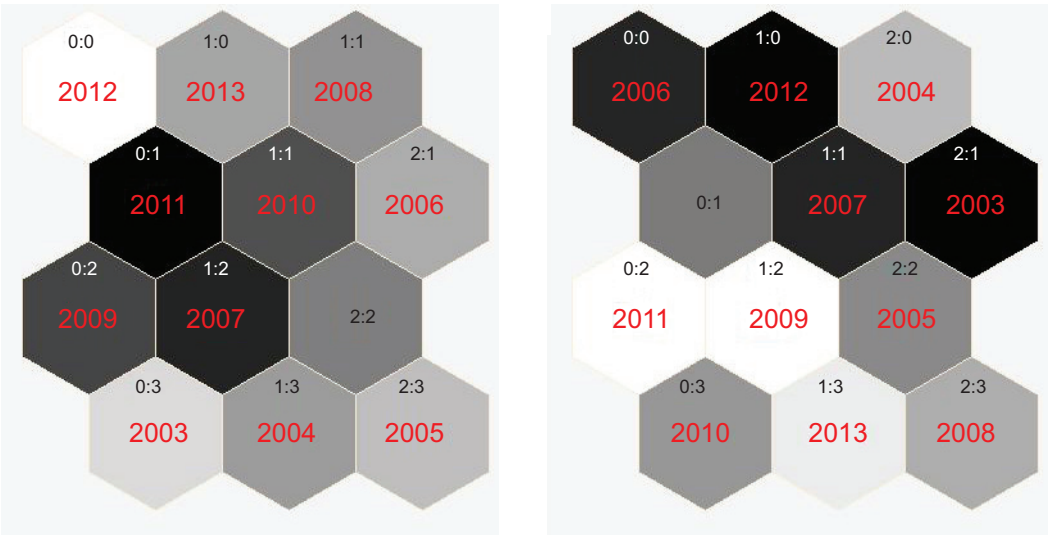


Fig. 3. SOMs describing the development of agritourisms able to offer other rural activities (on the left) and agritourisms with other courses with a strong nexus to the rural world (on the right) over the time of study (*Source: elaboration on data www.istat.it. . Tourism statistics*)

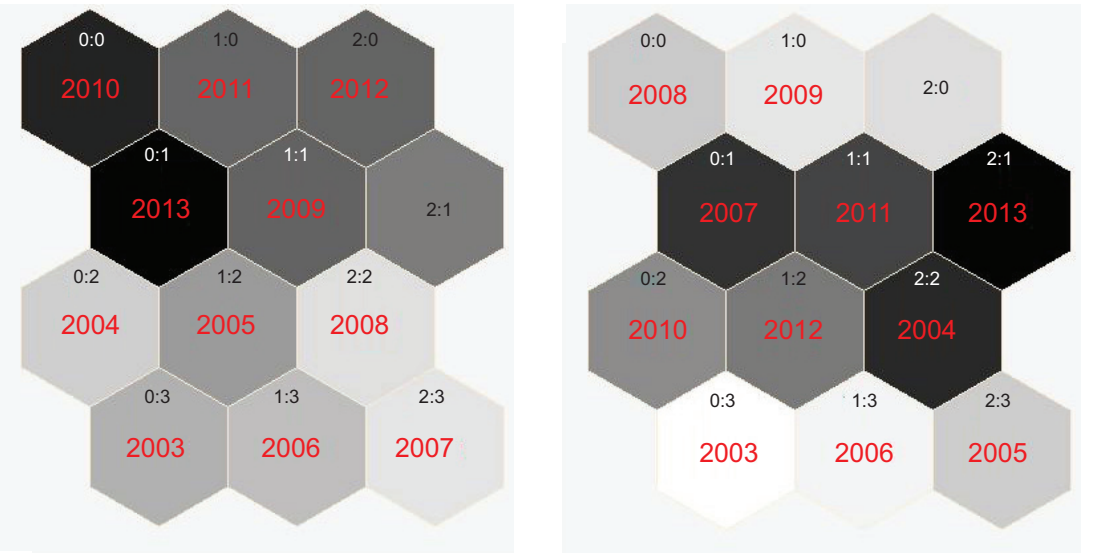
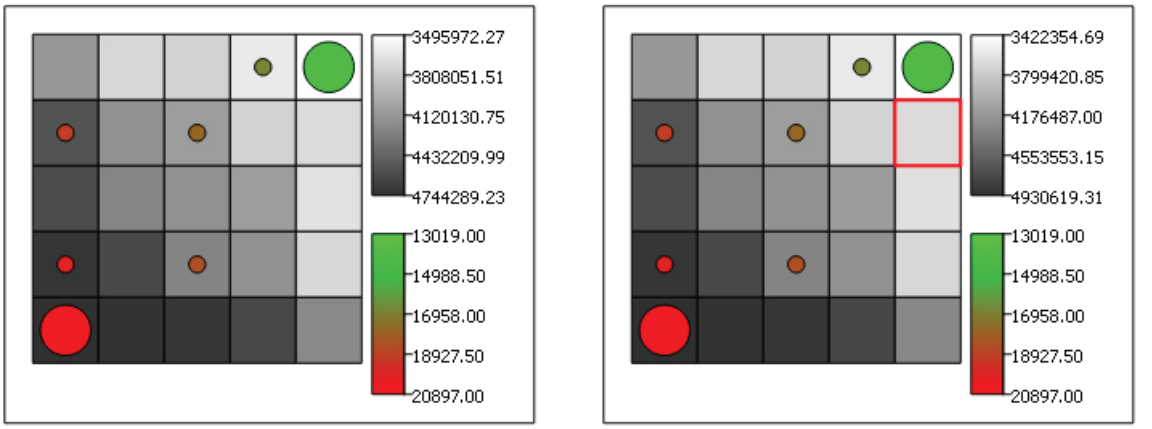


Fig. 4. SOMs about the growth of Italian presences (on the left) and foreign presences (on the right) over the time of study (*Source: elaboration on data www.istat.it. . Tourism statistics*)

ence of agritourism coming from domestic market and from abroad and the growth of farms producing certified quality food (Figure 5). Findings have highlight as the increase of agritourism is tightly connected to the development of farms able to produce certified quality foods. This has also corroborated the hypothesis of the existence of a strong nexus between certified quality food and development of agritourisms in Italy over the time of investigation (Figure 6); hence, the rural districts where tourism, rurality and agritourisms are blended together are the first and foremost pillars in generating a complete and integrated socio-economic development in rural territories. Agritourist is a niche tourist able to give value to the rurality and it needs countryside able to relax itself but in the same time the rural space and consequently Italian farmers should offer and valorise certified quality foods in favour of their guests.



A **B**

Fig. 5. SOMs comparing the correlations between Italian (A), foreign presences (B) and increase of Italian agritourism and development of farms producing certified quality food over the time of study. The spots scale of grey bottom right describe the diffusion of farms producing certified quality foods (*Source: elaboration on data www.istat.it. Tourism statistics and Italian statistical yearbook*)

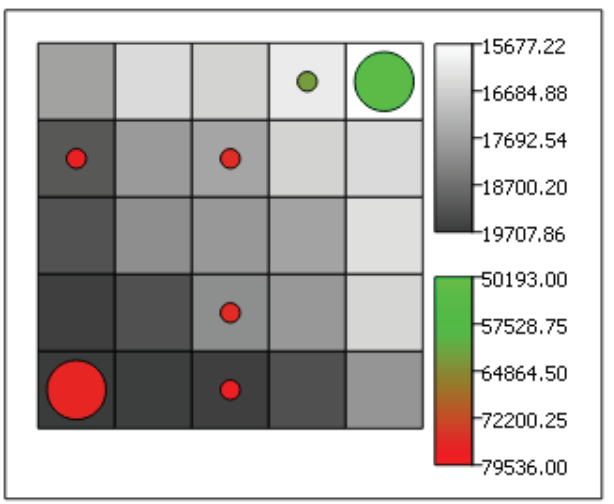


Fig. 6. SOMs analysing the growth of agritourisms in Italy and growth of farms able to produce certified quality foods (*Source: elaboration on data www.istat.it. Tourism statistics and Italian statistical yearbook*)

Conclusion

The analysis of time series on the agritourism in Italy has highlighted as tourists, regardless of their origin, are sensitivity to the typologies of services in agritourists corroborating the hypothesis of a nexus to the rurality.

Sports activities and tasting of certified quality food in farms are two fundamental variables that have acted on the development of rural districts able to strengthen their peculiarities connected to the rural Italian space. This has allowed enhancing both the agricultural productions and other agricultural commodities and also the territory, especially by foreign tourists who have increased their presence in agritourisms over the time of study.

The role of financial supports allocated by the European Union is a good opportunity for farmers to implement the multifunctionality in the primary sector by a diversification of activities in farms. Findings have pointed out as in consolidated tourist realities, for example in Tuscany and in Umbria, there has been a significant development and consolidation of a rural tourism able to give value both to the agritourism and also towards certified quality food able to promote the amenity and the sense of remoteness in less favored rural areas.

Summing up the role of the Rural Development Plan 2014-2020 in Italian regions should implement the level of financial supports in favour of young farmers in order to stimulate them by a diversification of their own activities throughout the agritourism, rural crafts and other recreational activities in connection to the rural tourism and to the rural space. For the next seven year time 2014-2020 it is pivotal to sustain economically and financially farmers in less favored rural areas in order to reduce out-migration from the countryside egging on rural young farmers and people in staying *in loco* by specific actions in supporting by integrated marketing strategies the rural tourism and the agritourism in inner and quite isolated rural areas.

References

Andrei, T. and R. Bourbonnais, 2008. Econometrie. *Editura Economică*, Bucuresti, 400 pp. (Ro).

Asteriou, D. and S. G. Hall, 2011. Applied Econometrics, 2nd ed., *Palgrave Macmillian*, New York, 500 pp.

Baltagi, B. H., 2011. Econometrics. *Springer-Verlag*, Berlin, 410 pp.

Bishop, C. M., M. Svensen and C. K. I. Williams, 1998. *Neural Comput.,* **10** (1): 215-234.

Clemens, R., 2004. Keeping Farmers on the Land: Adding Value in Agriculture in the Veneto Region of Italy, *MATRIC* Briefing Paper 04-MBP 8.
www.matric.iastate.edu

Contini, C., P. Scarpellini and R. Polidori, 2009. Agri-tourism and rural development: the Low Valdelsa case, Italy. *Tourism Review*, **64** (4): 27-36.

Galluzzo, N., 2006. Il ruolo dell'agriturismo sulle comunità rurali della regione Lazio. Un'analisi geostatistica, socio-economica e ambientale. *Agribusiness Paesaggio & Ambiente*, **9** (3): 211-217.

Galluzzo, N., 2008a. The impact of II pillar on the multifunctionality in Italian farms: analysis on the farm holidays. In: The CAP after Fischler Reform: National Implementations, Impact Assessment and the Agenda for Future Reforms, Proceedings of the 109th EAAE seminar, Viterbo 20-21 November 2008, pp. 1-20.

Galluzzo, N., 2008b. L'ammodernamento nel settore primario e il distretto rurale: una concreta opportunità. *Agriregionieuropa*, **4** (12): 48-51.

Galluzzo, N., 2008c. Analisi economica. Indagini di Marketing e Prospettive Operative dell'Olivicoltura Nelle Zone Interne della Regione Lazio. Un Caso Di Studio Nell'area Di Produzione. *Aracne Editrice,* Roma, 122 pp (It).

Galluzzo, N., 2009a. Agriturismo e Distretti per la Valorizzazione delle Aree Rurali Aspetti Generali e Applicativi su Alcuni Casi di Studio. *Aracne Editrice*, Roma, 233 pp (It).

Galluzzo, N., 2009b. Capacità interattiva dell'agriturismo italiano verso alcuni paesi dell'Unione europea. Un'applicazione del modello gravitazionale. *Bollettino della Società Geografica*, **12** (2): 673-688.

Galluzzo, N., 2010a. Ruolo e Funzione Socio-Economica dell'Agricoltura Italiana per la Salvaguardia delle Aree Rurali. *Aracne Rditrice*, Roma, 161 pp.

Galluzzo, N., 2010b. Rural districts and generational turnover in Italian regions tools to protect the rural space. In: Rural Development: Governance, Policy Design and Delivery (Proceedings of the 118th EAAE seminar, Ljubljana, 25-27 August 2010), pp. 527-534.

Galluzzo, N., 2013. Farm dimension and efficiency in Italian agriculture: a quantitative approach. *American Journal of Rural Development*, **1** (2): 26-32.

Galluzzo, N., 2014. The evolution of Italian farms and the role of subsidies paid by the European Union for rural development. *Romanian Review of Regional Studies*, **10** (1): 79-88.

Haykin, S., 1999. Neural Networks: a Comprehensive Foundation, 2nd ed., *Prentice Hall*, New Jersey.

Ilbery, B. W., 1998. The Geography of Rural Change. *Pearson Education Limited*, Harlow, 267 pp.

Kaski, S. and T. Kohonen, 1996. Exploratory data analysis by the self-organizing map: structures of welfare and poverty in the world. In: A. P. Refenes, A. M. Yaser and A. Weigend (Eds.) Proceedings of the Third International Conference on Neural Networks in the Capital Markets: *World Scientific,* pp. 498-507.

Kohonen, T., 1984. Organization and Associative Memory. *Springer-Verlag,* Berlin, 332 pp.

Kohonen, T., 2001. Self-Organizing Maps, 3rd extended ed., *Springer-Verlag,* Berlin Heidelberg, 502 pp.

Lo Surdo, G., 1988. Agriturismo. Risorse-Gestione-Programmazione-Esperienze, *Ed. Agricole*, Bologna, 206 pp.

Lucchini, M., 2007. L'analisi dei gruppi. In: A. De Lillo, G. Argentin, M. Lucchini, S. Sarti and M. Terranno (Eds.) Analisi Multivariata per le Scienze Sociali, *Pearson Educational*, Torino, pp. 197-245.

Mattiacci, A. and C. Vignali, 2004. The typical products within food "glocalisation": The makings of a twenty first century industry. *British Food Journal*, **106** (10/11): 703-713.

Mehmood, Y., M. Abbas, X. Chen and T. Honkela, 2011. Self-Organizing Maps of Nutrition, Lifestyle and Health Situation in the World. In: J. Laaksonen and T. Honkela (Eds.) WSOM 2011, LNCS 6731, *Springer-Verlag,* Berlin Heidelberg, pp. 160-167.

Ohe, Y. and A. Ciani, 1998. Remove from Marked Records. The activity and characteristics of agri-tourism farms: a study of Umbria, Italy. *Journal Bulletin of the Chugoku National Agricultural Experiment Station*, **19**: 1-18.

Ohe, Y. and A. Ciani, 2011. Evaluation of agritourism activity in Italy: facility based or local culture based? *Tourism Economics,* **17** (3): 581- 601.

Phillip, S., C. Hunter and K. Blackstock, 2010. A typology for defining agritourism. *Tourism Management,* **31:** 754-758.

Privitera, D., 2009. Factors of development of competitiveness: the case of organic-agritourism. In: The Role of Knowledge, Innovation and Human Capital in Multifunctional Agriculture and Territorial Rural Development (Proceedings of the 113th EAAE Seminar, Belgrade, 9-11 December 2009), pp. 1-12.

Sidali, K. L., A. Spiller and B. Shulze, 2011. Food, agri-culture and tourism: linking local gastronomy and rural tourism: interdisciplinary perspectives. *Springer-Verlag,* Berlin Heidelberg, 197 pp.

Sonnino, R., 2004. For a 'piece of bread'? Interpreting sustainable development through agritourism in southern Tuscany. *Sociologia Ruralis*, **44**: 285-300.

Sznajder, M., L. Przezbórska and F. Scrimgeour, 2009. Agritourism. *CABI*, Willingford, 301 pp.

Van der Ploeg, J. D., 2006. Oltre la modernizzazione. Processi di Sviluppo Rurale in Europa. *Rubettino*, Soveria Mannelli, 146 pp.

Van der Ploeg, J. D., A. Long and J. Banks, 2002. Living Countrysides: Rural Development Processes in Europe: the State of the Art. *Elsevier EBI,* Doetinchem, 231 pp.

Ventura, F. and P. Milone, 2000. Theory and practice of multiproduct farms: farm butcheries in Umbria. *Sociologia Ruralis*, **40** (4): 452-465.

Verbeek, M., 2006. Econometria. *Zanichelli,* Bologna, 382 pp.

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