DISTANT BUT VIBRANT PLACES. LOCAL DETERMINANTS OF ADAPTABILITY TO PERIPHERALITY

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ABSTRACT

Against the discourse according to which peripheral areas are places doomed to an inevitable fate of constant demographic decline, the aim of this paper is to contribute to the understanding of the local determinants fostering adaptability to prolonged challenges connected to a condition of peripherality. Exploiting the classification produced within the Italian National Strategy for Inner Areas, we investigate the determinants of positive demographic long-term growth paths of Italian peripheral municipalities using population variation as the dependent variable in a spatially deep lagged model relying on census data from 1971 to 2011. Our longitudinal study provides evidence on the positive effects of demographic and labour-skills related factors on population dynamics, that may prove to be crucial in supporting policymakers when formulating place-sensitive strategies to enhance the adaptive capability of places in the face of long-term slow-burning pressures.

Key words: adaptability; Italian inner areas; peripherality; slow-burns; population decline; multinomial logistic regression model

INTRODUCTION

One of the major dilemmas in Economic Geography is the identification of the determinants of the success of some regions in experiencing a sustainable growth path in the face of all sorts of shocks against the cases of territories remaining locked into a declining spiral (Hu & Hassink 2020).

From an evolutionary perspective, it then becomes of paramount importance to understand the ability of a territory to resist long-standing stresses and stressors (Urso *et al.* 2019), acquiring those capacities to cope with persistent negative downturns (Manca *et al.* 2017) or enduring long-term processes of natural, physical, human resources depletion known in literature as slow-burning processes (Pendall *et al.* 2010).

Despite a huge literature on the reaction to acute shocks, mostly through the analytical lenses of the notion of resilience, what seems to be hitherto under-investigated are the responsive behaviours of territories to other types of disturbances – namely prolonged, chronic ones which might prove to be corrosive of regional or local adaptability – and the underlying mechanisms and successful coping strategies to them (Boschma 2015; Gong & Hassink 2017; Hu & Hassink 2017). This is especially the case for most peripheral areas, challenged by demographic slow-burning processes, where a given condition of peripherality might hinder their adaptability capacity (Pezzi & Urso 2017).

In many Western countries demographic transition is a long-standing phenomenon dating back to the end of the XVIII century when

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the equilibrium between birth and death rates was broken. Particularly after WWII, an unstoppable urbanisation phenomenon of both individuals and economy (Storper & Scott 2016) has begun, mainly pushed by globalisation, migrations and agglomeration policies promoting concentration of resources and fostering economic and industrial growth in urban areas. As such, these fluxes have determined an uneven distribution of population, usually favouring urban centres to the detriment of the poorer and more peripheral territories, leaving them doomed to a chronic population decline and stagnation (Iammarino *et al.* 2018). In recent years, against a general context of population stagnation, a complex combination of natural and migration dynamics has enabled some regions to successfully increase their population (Viesti 2021).

The choice of investigating the case of Italy proves to be an interesting research venue due to some peculiar features: a delayed industrialisation leading to a concentration in 50 years of typical phases of urban transitional dynamics, a heterogeneous, uneven economic and social development across the country (Bonifazi & Heins 2003), an out-migration phenomenon from mountain and rural areas along the Apennines and the Mezzogiorno regions – but also from the North-East – (INEA 1932-1938; Fornasin & Lorenzini 2019; Bonifazi *et al.* 2020) in search of more economically viable means of livelihood (Biagi *et al.* 2011), and, last but not least, the recent attention devoted to Inner areas by a National Strategy aiming at inverting depopulation trends.

Using census data collected by the Italian National Institute of Statistics (henceforth ISTAT), and exploiting the classification proposed by the Italian National Strategy for Inner Areas, our study aims to advance knowledge on the possible factors explaining why some territories have successfully managed to cope with a given condition of peripherality, by examining their positive long-run adaptability against the backdrop of a generalised tendency to depopulation (Dawley *et al.* 2010; Hu & Hassink 2020), modification of lifestyles and contraction of the demographic structure (Eurostat 2019; ISTAT 2021). To this end, our paper proposes a classification of territories according to demographic trends and presents the results of a long-term analysis at municipal level of socio-economic changes having occurred in Italy over the period 1971–2011, using population growth as a proxy for adaptability.

The paper is organised as follows. Section 1 provides a brief description of the concept of adaptability. An overall appraisal of the historical background describing the demographic trends characterising Italy in the past 70 years is presented in Section 2, together with the defining rationale underlying the identification of Inner areas as proposed by the Italian Government. Section 3 explains the methodology followed to investigate the behaviour of Inner areas in terms of demographic trends. Section 4 presents the results of the analysis and discusses them. Finally, Section 5 draws some conclusions and suggests possible future research avenues to lead a broader reflection also at policy level.

ON THE NOTION OF ADAPTABILITY

When considering the reaction of places to any disturbance, the immediate theoretical reference is to the notion of resilience. In spite of an ever-growing recognition of being a powerful analytical tool to investigate local development paths and responses to shocks (Gong *et al.* 2020), the concept of resilience has not been free of criticism, first and foremost the lack of definitory rigour due to a multitude of meanings and nuances granted in the name of 'analogies' to other fields (Martin & Sunley 2015). According to Dawley *et al.* (2010), the concept mainly suffers from three types of issues: in terms of evolutionary perspective, geographical application and political implication. The first relates to the fact that resilience approaches are often embedded in (either single or multiple) equilibrium-based frameworks. The second to the focus on recovery from acute one-time shocks mostly from a regional and metropolitan perspective. The latter to the fact that the resilience framework is not sufficiently able to take into account other geographies or contemporary territorial readings of space and the role of modern economies of power.

A new wave of studies has therefore started to emerge proposing the concept of

(progressive) adaptation and (permanent) adaptability (Walker & Cooper 2011) within an evolutionary approach to local development growth paths. While the former addresses the issue in terms of changes within path dependent processes maintaining existing or the primary functions of a system, the latter accounts for an adaptive capability of territories in developing new pathways building upon existing assets utilised for new purposes (Pike *et al.* 2010; Boschma 2015; Bristow & Healy 2015; Gong & Hassink 2017; Hu & Hassink 2017). In the words by Pike *et al.* (2010, p. 62): 'adaptation is defined as a movement towards a pre-conceived path in the short run […]. Whereas adaptability is defined as the dynamic capacity to effect and unfold multiple evolutionary trajectories […], that enhance the overall responsiveness of the system'.

Adaptability thus denotes an ongoing and transforming feature of a community, country or region that influences its propensity or ability to adapt (IPCC 2001) in line with its resources and assets (Adger & Vincent 2005), available at a certain time – both as a consequence of a past dependent evolution and of renewing influxes, in a specific set of social, contextual relations that may affect the vulnerability of a community (Bassett & Fogelman 2013). It is also interpreted as a proactive capacity to adjust to a disturbance or a moderate potential damage, thereby taking advantage of opportunities and coping with the consequences of a transformation (Gallopín 2006). In short, it can be meant as the 'capacity of a system to maintain core performances despite shocks by adapting its structure, functions and organization' (Martin & Sunley 2015, p. 4).

Empirical applications to endogenous disturbances, hence to 'slow-burn' pressures that are both challenges and outcomes (Pendall *et al.* 2010), are rare and even more so are those focussing on the way in which territories react to and cope with long-run relative (or even absolute) continuous and incremental decline or on how they adapt and why they adapt differently (Hassink 2010; Martin & Sunley 2015; Hu & Hassink 2020).

With the aim of attempting to fill this gap, our work sheds new light on the slow-burning pressure of depopulation and on the determinants of the capacity of a place to contrast such chronic phenomenon and build its adaptive capacity.

POPULATION DECLINE IN ITALY AND THE NATIONAL STRATEGY FOR INNER AREAS

The depopulation of Italian Inner areas started in the late 30's mainly due to the decline of agricultural economy and the loss of the essential elements of life in the mountains: male migration, livestock farming and forestry (INEA 1932-1938; Fornasin & Lorenzini 2019), furtherly exacerbated during the 50's and the 60's by the rapid economic growth and the evolution of manufacturing industries driving interregional migration from the Apennines and the Mezzogiorno regions – but also from the North-East – mainly to Lombardia, Piemonte and Lazio regions (Bonifazi *et al.* 2020).

From the 70's, the shrinking of population size due to a decreasing fertility rate and an historical uneven non compensatory internal migration pattern (ISTAT 2020) sharpened the phenomenon of depopulation of non-core areas, moving from representing over a third of total population in 1951 down to just a fifth in 2011.[1] While municipalities close to the main cities and infrastructures generally continued to relatively grow (+12 million since 1951), small and medium-sized urban centres and rural areas have declined (−1 million) (Colucci 2019; SVIMEZ 2019), thus resulting in a rarefaction and deterioration in quality and quantity of public services (ISTAT 2019).

In 2012 the Italian Government launched the National Strategy for Inner Areas, a nation-wide support scheme aimed at tackling the diffuse phenomenon of depopulation and overcoming the urban–rural dichotomy under the assumption that the deterioration and unequitable provision of essential services is a hindering factor for local development (UVAL 2014; Lucatelli 2016; Urso 2016).

Inner Areas were mapped according to a peripherality indicator measured in terms of

travel-time distance from the nearest service provision centre. This allowed the identification of six classes: single 'Urban Poles', or an aggregation of service provision centre municipalities 'Intermunicipal Poles' (henceforth 'Centres'), 'Outlying/Belt Areas' (up to 20 min), 'Intermediate Areas' (between 20 and 40 min), 'Peripheral Areas' (between 40 and 75 min), 'Ultra-peripheral Areas' (beyond 75 min). The last three classes are labelled as 'Inner areas'.[2]

DATA AND METHODOLOGY

Analysing the factors enabling a territory to resist long-term pressures, such as the general tendency to depopulation in the case of remote areas, is a rather complex task.

Within the social sciences literature, the measurement and assessment of adaptive capacity of socio-ecological systems have followed different approaches (Whitney *et al.* 2017), more usually focussing on economic factors (GDP, employment rate, etc.) and comparatively less on demographic features, which are rather used as explanatory variables (Ifejika Speranza *et al.* 2014; Whitney *et al.* 2017; Capdevila *et al.* 2020). Our work, building on the latter stream of studies, hence concentrating on population dynamics in reaction to some kind of pressure (Belcher & Bates 1983; Chamlee-Wright 2010; Aldrich 2012; Xiao & Van Zandt 2012; Compagnucci & Morettini 2020; Fantechi *et al.* 2020), uses population growth as a proxy for the adaptive capacity of peripheral territories. Consistent with previous literature (Dubé & Polèse 2016) according to which population variation may not be suitable to evaluate reactions from sudden shocks as population inertia may hinder its explanatory power, we argue that it may instead be extremely revealing when considering prolonged disturbances to a system equilibrium.

In line with the empirical strategy adopted in previous works (Faggian *et al.* 2018), we followed a two-step approach to guide our analysis. To do so, we:

1. classified all municipalities according to their demographic trends over the entire observation period (1971–2011);
2. run two sets of models at municipal level linking the structural characteristics of peripheral areas to the likelihood of belonging to one of the categories identified in point 1, using a Multinomial Logit Model (MNL). These are:
   a an initial exploratory analysis of population variation in all municipalities over the entire period of observation (1971–2011) accounting for different degrees of peripherality exploiting the SNAI classification;
   b an analysis limited to Inner areas over the entire observation period (1971–2011) and for two sub-periods (1971–1991 and 1991–2011) to include additional variables not available for previous periods.

Building on other studies on the dynamics of population growth in Italy (ISTAT 2017; Accetturo *et al.* 2019), we started by observing long-term demographic trends of Italian municipalities using census data over the last five censuses[3] (1971, 1981, 1991, 2001 and 2011).

Instead of using population variation as a continuous variable we transformed it into a categorical variable to account for the increase/decrease of demographic trends over time. We thus identified three categories of municipalities that we named as 'Vibrant', whether they experienced a stable demographic growth pattern over the period considered, 'Slow-burning', whether they experienced a stable declining pattern and 'Switching', whether they experienced at least one diverging behaviour with respect to the previous census period.

In order to simultaneously consider the factors affecting the probability of belonging to one of the identified categories, we used a Multinomial Logit model (MNL) as follows (as in Train 2003):

$$P_{ni}(k) = \frac{e^{\beta' X_{ni}}}{\sum_j e^{\beta' X_{nj}}} \quad (1)$$

where x_{nj} is a vector of observed variables relating to alternative j with a set of associated coefficients β'.

As the adaptive capacity of a territory builds upon its resources and assets (Adger & Vincent 2005), following the suggestions of

Dubé and Polèse (2016), our model employs a wide range of variables selected according to literature and their inter-relation to control for specific phenomena.

The variables chosen were then classified into four main 'domains' to account for the extent to which 'the development trajectories of (semi) peripheral regional economies must be apprehended from a historical perspective and considering […] sociocultural and socioeconomic assets and weaknesses' (Moulaert 1996, p. 163).

These are[4]:

- *Demography*: population density; share of children and elders on total population; young and old age dependency ratios; share of foreign residents (Cheshire & Magrini 2006; Pirotte & Madre 2011; da Silva *et al.* 2017).
- *Human Capital*: share of illiterates, share of adult population and young people holding a secondary or tertiary degree; gender gap in secondary education; share of NEETs; professional competences (Duranton & Turner 2012; Faggian *et al.* 2017; Huang *et al.* 2002; Lutz & Qiang 2002; Martin *et al.* 2016; Partridge *et al.* 2007).
- *Economy*: female employment and unemployment rates; percentage of total employment in industry, agriculture and commercial sector; generational turnover and business density (Beeson *et al.* 2001; Jacobs-Crisioni & Koomen 2017);
- *Living conditions*: share of owner-occupied dwellings (Bijker & Haartsen 2012); share of under-occupied dwellings; share of municipality surface occupied by human settlement; degree of social and material vulnerability to account for neighbourhood environment and household living conditions.

Furthermore, time-invariant characteristics and regional fixed effects were included to account for location-specific amenities and other unobserved regional features. More precisely, we controlled for:

- *Administrative level*: Regions (NUTS2 level) to test whether regional behavioural and cultural difference play a role;
- *Geo-morphological characteristics*: in order to account for the role played by 'first nature' factors that might have determined the initial settlement choices (Chi & Ventura 2011; Knapp & Gravest 1989), we controlled for the municipal altimetric level or closeness to the sea;
- *Natural and economic heritage*: in order to account for the role played by natural amenities (Gosnell & Abrams 2009) and by the belonging to an industrial district (1991 classification),[5] we controlled whether the municipality falls within a protected area site (e.g. national or regional parks or natural reserves), it is classified as a tourist destination, or it is part of an industrial district.

Finally, embracing the definition of adaptivity as both an inherited feature as well as a dynamic process as suggested by Reghezza-Zitt *et al.* (2012), we also adopted a temporal perspective: exploring the qualities possessed by the system per se (a-chronic) and their evolution and significance over time (diachronic). Therefore, in order to account for both continuum properties as well as short-medium term dynamics influencing the adaptive capacity at a certain time, besides a full period analysis (1971–2011), we run the model over two sub-periods (1971–1991 and 1991–2011). Furthermore, exploiting the new information provided for in the last three censuses (from 1991), we introduced an additional step of analysis for the latter period (1991–2011). This also allowed us to investigate the effects of two phenomena which might have a role in explaining depopulation trends in Inner areas: intra and inter-regional migration towards core areas, with reference to the period 1971–1991, and the impact of the 1990–1991 'smorgasbord recession' (Krugman, 2018 as cited in Love & Freebairn 2022), as well as the increased importance of growing international migration (ISTAT 2011) for the period 1991–2011.

DISCUSSION OF RESULTS

In the academic literature, the notions of 'peripheral' or 'marginal' are still controversial. They are concepts which are both time and space dependent, often defined in terms of features and characteristics that are not present or as the opposite of a main focus or, again, in terms of their relationship with a centre (Ferrão & Lopes 2004; Danson & Souza 2012).

Aiming to provide an objective reference of peripherality and a homogenous unit of analysis, as well as to control for the attraction power of urban poles and account for similar outcomes of depopulation phenomena potentially replicable to other contexts, we chose to exploit the classification proposed by SNAI.

Figure 1 below shows the distribution of the three categories ('Vibrant', 'Slow-burning' and 'Switching'), as identified above, over the national territory, with a special focus on Inner areas.

In spite of a scattered distribution of the three categories throughout the country (Figure 1), the majority of slow-burning municipalities are concentrated along the Apennines ridge (from where the origin of the term 'Inner' used in the national strategy).

More in details, the slow-burning phenomenon involves around a quarter of the overall number of municipalities (approximately 85% of those classified as Inner areas and 15% of Centres). Conversely, vibrant municipalities account overall for approximately a third of the total, out of which almost three quarters are Centres.

Regionally-wise, as expected, the majority of slow-burning territories are located in Central-Southern regions (Table 1), mainly along the Apennines, with Abruzzo, Molise and Basilicata showing the highest percentages (46.2%, 58.1% and 55.8%, respectively). The remaining regions in the Centre-South of the country are more in line with Northern ones, against a total mean of 22%. Except for Valle d'Aosta (5.4%) and Trentino-Alto Adige (7.9%) – two of the smallest regions – and Lombardia (9.9%) – one of the best performing regions in terms of economic growth (the 'Italian engine') – which show rates below 10%, the phenomenon under investigation is more or less distributed all over the national territory, discarding in some way the common pattern of the North–South dualism.

If we consider only Inner areas, among the regions showing over 40% of slow-burning municipalities out of them, we find Piemonte and Friuli-Venezia Giulia in the North, Toscana and Marche in the Centre, and Abruzzo, Molise, Basilicata, Calabria, Sicilia and Sardegna in the South and the islands. Although substantial parts of Inner areas suffering from long-run depopulation are found also in Northern and Central Italy, this slow-moving challenge has particularly put Southern ones under pressure, where out-migration – mainly due to lack of prospects – coupled with a general trend of ageing population, has sharpened the issues.

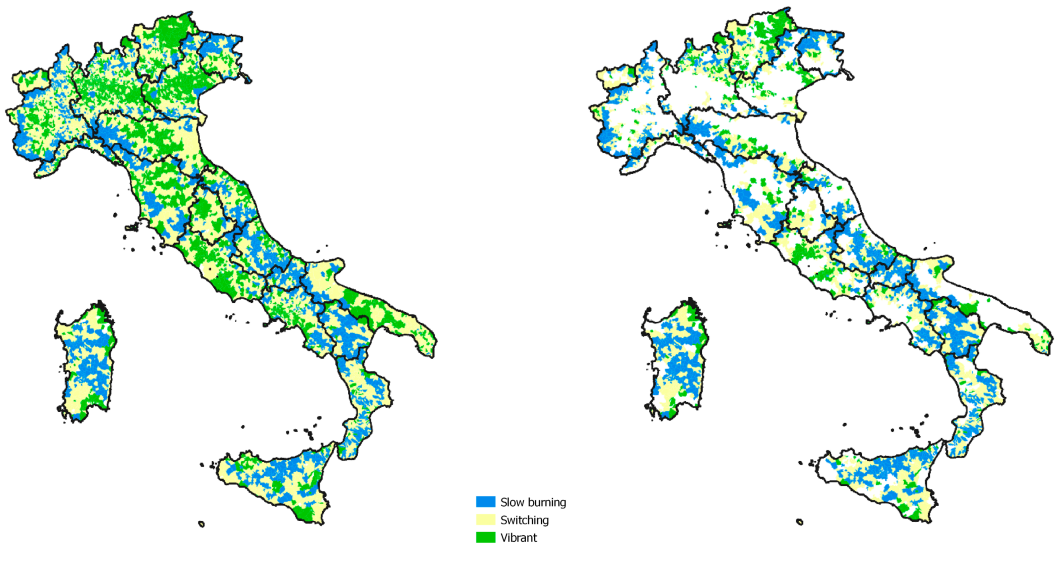

Figure 1. *Distribution of demographic trend behaviours (left: all Italian territory; right: only Inner areas). Source: Authors' own elaboration on ISTAT data.*

Table 1. *Number of municipalities and total demographic variation (1971–2011) per Region (of which Inner areas) and per switching behaviour category.*

	Slow-burning			Vibrant			Switching			Total	
Region	***N***	% total	Δ pop. (1971–2011, %)	***N***	% total	Δ pop. (1971–2011, %)	***N***	% total	Δ pop. (1971–2011)	***N***	Δ pop. (1971–2011, %)
Piemonte	298	24.75	–26.10	206	17.11	47.82	700	58.14	58.14	1204	–1.51
of which Inner Areas	*197*	*43.01*	*–33.49*	*30*	*6.55*	*45.04*	*231*	*50.44*	*50.44*	*458*	*–7.33*
Valled'Aosta/Valléed'Aoste	4	5.41	–25.06	18	24.32	73.55	52	70.27	70.27	74	16.18
of which Inner Areas	*4*	*9.09*	*–25.06*	*4*	*9.09*	*54.76*	*36*	*81.82*	*81.82*	*44*	*9.51*
Lombardia	152	9.86	–27.01	704	45.68	54.87	685	44.45	44.45	1541	13.48
of which Inner Areas	*118*	*23.23*	*–25.99*	*110*	*21.65*	*40.77*	*280*	*55.12*	*55.12*	*508*	*6.78*
Trentino-AltoAdige/Südtirol	26	7.88	–25.90	140	42.42	36.21	164	49.70	8.25	330	22.33
of which Inner Areas	*26*	*10.36*	*–25.90*	*88*	*35.06*	*33.60*	*137*	*54.58*	*54.58*	*251*	*19.20*
Veneto	74	12.80	–19.28	281	48.62	48.84	223	38.58	38.58	578	17.42
of which Inner Areas	*45*	*23.68*	*–23.75*	*65*	*34.21*	*34.92*	*80*	*42.11*	*42.11*	*190*	*13.69*
Friuli-Venezia Giulia	51	23.50	–26.60	49	22.58	37.36	117	53.92	53.92	217	0.46
of which Inner Areas	*44*	*51.16*	*–35.81*	*7*	*8.14*	*25.10*	*35*	*40.70*	*40.70*	*86*	*–10.55*
Liguria	58	24.68	–27.40	43	18.30	40.01	134	57.02	57.02	235	–15.26
of which Inner Areas	*38*	*36.89*	*–34.23*	*10*	*9.71*	*48.79*	*55*	*53.40*	*53.40*	*103*	*–7.58*
Emilia-Romagna	62	17.82	–30.50	121	34.77	46.38	165	47.41	47.41	348	12.38
of which Inner Areas	*53*	*36.30*	*–33.12*	*26*	*17.81*	*58.85*	*67*	*45.89*	*45.89*	*146*	*5.98*
Toscana	65	22.65	–25.26	95	33.10	34.55	127	44.25	44.25	287	5.73
of which Inner Areas	*55*	*43.31*	*–26.58*	*15*	*11.81*	*28.77*	*57*	*44.88*	*44.88*	*127*	*–5.53*
Umbria	13	14.29	–25.42	28	30.77	29.53	50	54.95	54.95	91	13.65
of which Inner Areas	*13*	*21.43*	*–26.40*	*9*	*16.07*	*24.16*	*35*	*62.50*	*62.50*	*56*	*3.56*
Marche	57	23.85	–15.22	74	30.96	43.90	108	45.19	45.19	239	14.77
of which Inner Areas	*44*	*41.51*	*–23.89*	*15*	*14.15*	*31.26*	*47*	*44.34*	*44.34*	*106*	*–4.81*
Lazio	52	13.90	–30.56	136	36.36	73.75	186	49.73	49.73	374	14.16
of which Inner Areas	*52*	*17.99*	*–30.56*	*91*	*31.49*	*93.63*	*146*	*50.52*	*50.52*	*289*	*43.22*
Abruzzo	141	46.23	–32.98	53	17.38	56.07	111	36.39	36.39	305	12.05
of which Inner Areas	*135*	*58.70*	*–35.15*	*18*	*7.83*	*42.64*	*77*	*33.48*	*33.48*	*230*	*–4.03*
Molise	79	58.09	–36.33	10	7.35	69.79	47	34.56	34.56	136	–1.92
of which Inner Areas	*75*	*68.81*	*–36.34*	*4*	*3.67*	*84.94*	*30*	*27.52*	*27.52*	*109*	*–13.32*
Campania	117	21.51	–23.06	165	30.33	63.31	262	48.16	48.16	544	12.80
of which Inner Areas	*103*	*38.29*	*–28.06*	*26*	*9.67*	*53.73*	*140*	*52.04*	*52.04*	*269*	*–4.42*
Puglia	36	14.29	–30.62	70	27.78	37.29	146	57.94	57.94	252	12.27
of which Inner Areas	*33*	*24.44*	*–32.66*	*22*	*16.30*	*33.01*	*80*	*59.26*	*59.26*	*135*	*8.19*

(Continues)

Table 1. (Continued)

Region	Slow-burning			Vibrant			Switching			Total	
	N	% total	Δ pop. (1971–2011, %)	*N*	% total	Δ pop. (1971–2011, %)	*N*	% total	Δ pop. (1971–2011)	*N*	Δ pop. (1971–2011, %)
Basilicata	72	55.81	-35.64	9	6.98	36.22	48	37.21	37.21	129	-5.91
of which Inner Areas	*72*	*58.06*	*-35.64*	*6*	*4.84*	*31.98*	*46*	*37.10*	*37.10*	*124*	*-13.97*
Calabria	157	38.48	-33.92	44	10.78	28.35	207	50.74	50.74	408	-1.68
of which Inner Areas	*145*	*45.03*	*-34.88*	*21*	*6.52*	*48.24*	*156*	*48.45*	*48.45*	*322*	*-9.47*
Sicilia	124	32.46	-27.62	79	20.68	50.06	179	46.86	46.86	382	6.02
of which Inner Areas	*116*	*40.70*	*-28.53*	*35*	*12.28*	*26.24*	*134*	*47.02*	*47.02*	*285*	*-1.84*
Sardegna	141	39.72	-28.32	55	15.49	84.42	159	44.79	44.79	355	6.84
of which Inner Areas	*141*	*46.84*	*-28.32*	*35*	*11.63*	*74.39*	*125*	*41.53*	*41.53*	*301*	*2.47*
Total	1779		-26.27	2380		50.25	3870		0.73%	8029	9.07
of which Inner Areas	*1508*		*-30.69*	*637*		*0.50*	*1994*		*47.38%*	*4139*	*3.30*

Looking at what we defined as vibrant territories, our category of interest since we interpret them as places thriving despite a given condition of peripherality, we see that 'vibrancy' is quite heterogeneous in Northern regions – ranging from Piemonte, with only 6.6% of always growing municipalities classified as Inner areas, or Friuli-Venezia Giulia with 8.1%, to the North-East, with Trentino-Alto Adige and Veneto respectively with 35.1% and 34.2% – and in Southern ones – with the minimum rate of peripheral municipalities constantly increasing their population shown by Molise (3.7%) and Basilicata (4.8%), to the more positive performances of Puglia (16.3%) and Sicilia (12.3%). Central Italy instead displays more similar patterns in this respect, presenting itself as a homogenous macro-region due to the common presence of Apennines as a unifying factor, except for Lazio which has a percentage of always growing Inner areas (31.5%), mainly located in the belt area of Rome, closer to the ones of Norther best performing regions.

The distribution of what we have called 'vibrancy' of peripheral areas is somehow scattered and does not show a homogenous, identifiable pattern construable through the traditional lenses of urbanisation dynamics.

The geography of the phenomenon per se, also partly due to the polycentric nature of the Italian urban structure, is not particularly informative of its underlying determinants and hence calls for further investigation.

Therefore, in order to assess the role played by specific socio-economic conditions in fostering adaptability in the face of the slow-moving challenge under scrutiny, we run an initial exploratory analysis to check for the robustness of the regressors and for the presence of relevant fixed effects requiring specific attention.

The first model in Table 2 shows the results of the analysis conducted over the whole observation period (1971–2011) where we focussed on the significativity of the spatial distribution – using the SNAI classification – on the determinants of a vibrant behaviour.[6] Following one of the main assumptions of SNAI, i.e. that depopulation has affected Inner areas more or less evenly throughout the whole country, no regional effect was added insofar.

In line with expectations, all demographic components are significant and thus play a

Table 2. *Multi Nomial Logit estimations. Dependent variable: Demographic trend 1971–2011 of all Italian municipalities (base category: Slow burning) – only Vibrant areas are shown.*

Variable	Vibrant areas (1971–2011)
Demography	
Population density	0.000***
	(0)
Population aged less than 6 years old	0.385***
	(0.025)
Population aged more 75 years old	−0.251***
	(0.02)
Old age dependency ratio	−0.121***
	(0.006)
Young age dependency ratio	0.016**
	(0.007)
Human capital	
Share of illiterates	−0.148***
	(0.007)
Share of population holding at least a secondary school degree	0.088***
	(0.005)
Gender gap in secondary education	−0.001**
	(0.001)
Share of young people holding a tertiary school degree	−0.022***
	(0.005)
Economy	
Female employment rate	0.022***
	(0.003)
Generational turnover index	−0.002***
	(0)
Share of occupation in agriculture	−0.023***
	(0.003)
Share of occupation in industry	−0.001
	(0.003)
Share of occupation in commerce	0.026***
	(0.005)
Business density	0.014***
	(0.001)
Living conditions	
Owner-occupied dwellings	0.002
	(0.002)
Under-occupied dwellings	0.020***
	(0.003)
National strategy for inner areas classification	
Poles (ref)	
Intermunicipal poles	0.836***
	(0.235)
Outlying areas	1.736***
	(0.146)
Intermediate areas	0.201
	(0.147)
Peripheral areas	−1.177***
	(0.154)
Ultra-peripheral areas	−2.041***
	(0.194)
Obs	40,051
Pseudo *R*-squared	0.299

****p < 0.01; **p < 0.05; *p < 0.1.*

role in explain the vibrancy of peripheral territories. More specifically, the presence of children is obviously a strong predictor for it, probably as a positive outcome of female emancipation and availability of nursing public services. Conversely, the share of people aged more than 75 years old and the old age dependency ratio are negatively related to it. In these cases, also due to the abandonment of Inner areas by the younger educated population (see later) attracted by the opportunities offered by the city, the declining trend may become irreversible, as testified by the expected result on population density.

As for human capital, our results show its crucial role in explaining the good performance of Inner areas in terms of population trends. Illiteracy indeed negatively impacts vibrancy, while the share of people holding (at least) a secondary school diploma greatly contributes to it. This is consistent with the SNAI rationale according to which providing an exhaustive range of secondary schools, coupled with healthcare and transportation, could limit dropout rates. The result on the share of people aged 30–34 years old holding a tertiary education degree – significant and negative – is rather difficult to interpret. It probably points to the phenomenon of young people who are in the precarious stage of attempting to enter the job market, during which they come back from urban poles, where they studied, to their native places in Inner areas while looking for employment opportunities, however leaving as soon as they get them.

As for the territorial economic conditions driving population increase in Inner areas, vibrancy is associated with a high female employment rate, business density and with a specialisation in commerce, testament of an open job market, a thick fabric of firms and a tertiarisation of the local economy (Chi & Ventura 2011; Duranton 2016). Female employment as driving factor in producing long-term positive trends in the areas under scrutiny points to the key role of women's participation to the job market and, indirectly, to that of childcare and parenting assistance to make it possible. Conversely, the negative effect of the share of occupation in agriculture is obviously linked to the long-term slow decline of the sector (INEA 1932-1938; Fornasin & Lorenzini 2019)

following a more general global trend – further exacerbated by a lack of investment in innovation which has prevented the sector to stay competitive – making Inner areas more largely dependent on agriculture grow less in terms of population.

The negative significance of generational turnover may be associated with the weaknesses of the school-to-work transition paving the way for the high youth unemployment rate that has always characterised Italy.

The results of the two variables representing the standards of living are very much in line with what expected. The variables included in the model intend to instrument the role played by social safety net provided by family ties in the choice of settling or remaining in a non-core area – where social services are lacking – and grow up a family. To do so, we introduced in the model the share of owner-occupied dwellings to proxy the intention of a long-term material investment and under-occupied dwellings to proxy households living conditions more than suitable for a family. This latter holds significant and positive showing that, also thanks to a higher availability of buildings, households in vibrant territories seem to live in small nucleuses and in larger spaces, as well as implying a tendency of the detachment from the parents' family. The non significativity of the owner-occupied dwellings may be explained by the Italian high home ownership rate (always above 70%, with peaks of more than 80% in Southern regions) compared with the tenure status of other European countries (e.g. Germany and France are both largely below, around 50% and 60%).

In geographical terms, our results show that the probability of experiencing a long-run positive demographic trend is higher in polycentric core areas and in the urban belts (i.e. 'Intermunicipal poles' and 'Outlying areas', with 'Urban poles' as base category, not shown in the table).

The expected negative outcomes of peripheral areas show a high significance which, as for the purpose of this research, is worth investigating further in the attempt to shed light on the specific determinants of the demographic behaviour of Inner areas and ultimately of the adaptive capacity of places to peripherality.

To this end, we run a second set of analysis (Table 3) limited to Inner areas where we controlled for specific literature-driven determinants of population dynamics. We also subdivided the period into two further temporal windows (1971–1991 and 1991–2011) for two main reasons, one analytical and one practical. This, in fact, allows us, on the one side, (i) to account for specific contingencies – intra and inter-regional migration towards urban centres, for the first sub-period, and globalisation and the growing international migration for the second one, as explained in Section 3 – and, on the other side, (ii) to exploit additional variables provided by ISTAT only after the 1991 census.

The results of the analysis confirm the role played by some factors on the vibrancy of peripheral territories. These are geographical location, demographic composition, as well as living conditions.

A further interesting insight may be derived from the adoption of a temporal lens in analysing the results. The figures of the share of young people holding a tertiary school degree are very informative in this sense, becoming salient in explaining respectively non-vibrancy in model 2 and vibrancy in the overall model after 1991.

As quite unanimously recognised within the literature, human capital is a precondition for development, as shown by the robustness of the results on basic education: illiteracy is incontestably detrimental to vibrancy while obtaining at least a first fundamental education (i.e. holding a secondary school diploma) is a strong supportive factor of a constantly positive population variation.

Whether the results on the demographic features are much in line with what we found in the first model in terms of significance and possible interpretations, reading together these latter with the dwelling-related (owner- and under-occupation) ones pertaining to the living conditions allows us to shed some additional light on resident population's features which are relevant when explaining vibrancy in peripheral areas. Both variables are highly significant throughout the four models, but while the latter variable shows a positive correlation with the vibrancy of a territory, the former has a negative sign. We guess that the reasons behind choosing to remain in these areas (or to migrate towards them) are not only ties-related,

Table 3. *Multi Nomial Logit estimations. Dependent variable: Demographic trend 1971–2011 of all Italian municipalities (base category: Slow burning) – only Vibrant areas are shown.*

	Vibrant areas			
	(1)	(2)	(3)	(4)
	1971–2011	1971–1991	1991–2011	1991–2011
Demography				
Population density	−0.000	−0.000*	−0.000	−0.004***
	(0.000)	(0.000)	(0.000)	(0.000)
Population aged less than 6years old	0.354***	0.429***	0.204***	0.234***
	(0.036)	(0.043)	(0.061)	(0.063)
Population aged more 75years old	−0.294***	−0.074*	−0.250***	−0.132***
	(0.030)	(0.043)	(0.041)	(0.045)
Old age dependency ratio	−0.132***	−0.130***	−0.200***	−0.244***
	(0.010)	(0.013)	(0.014)	(0.016)
Young age dependency ratio	0.045***	0.060***	0.153***	0.183***
	(0.009)	(0.011)	(0.019)	(0.020)
Share of foreign residents				0.005**
				(0.002)
Human capital				
Share of illiterates	−0.138***	−0.112***	−0.259***	−0.098***
	(0.013)	(0.015)	(0.035)	(0.038)
Share of population holding at least a secondary school degree	0.091***	0.091***	0.087***	0.020*
	(0.007)	(0.013)	(0.009)	(0.012)
Gender gap in secondary education	−0.001	−0.000	−0.003	−0.001
	(0.001)	(0.001)	(0.003)	(0.003)
Share of young people holding a tertiary school degree	−0.009	−0.035**	0.011	0.017*
	(0.008)	(0.014)	(0.010)	(0.010)
Share of NEETs				−0.005
				(0.006)
Share of high-skilled workers				0.003
				(0.012)
Share of craftsmen, skilled workers and farmers				−0.053***
				(0.015)
Share of low-skilled workers				−0.063***
				(0.016)

(Continues)

Table 3. (Continued)

	Vibrant areas			
	(1)	(2)	(3)	(4)
	1971–2011	1971–1991	1991–2011	1991–2011
Economy				
Female employment rate	0.022***	0.019***	0.033***	0.032***
	(0.004)	(0.005)	(0.009)	(0.009)
Generational turnover index	−0.004***	−0.004***	−0.005***	−0.002**
	(0.001)	(0.001)	(0.001)	(0.001)
Share of occupation in agriculture	−0.028***	−0.021***	−0.048***	−0.015
	(0.004)	(0.005)	(0.008)	(0.011)
Share of occupation in industry	−0.003	0.007	−0.009	0.005
	(0.004)	(0.005)	(0.007)	(0.010)
Share of occupation in commerce	0.030***	0.030***	0.046***	0.041***
	(0.007)	(0.008)	(0.010)	(0.011)
Business density	0.009***	0.008***	0.005**	0.001
	(0.001)	(0.002)	(0.002)	(0.002)
Unemployment rate				−0.054***
				(0.010)
Living conditions				
Owner-occupied dwellings	−0.019***	−0.024***	−0.033***	−0.023***
	(0.004)	(0.004)	(0.007)	(0.007)
Under-occupied dwellings	0.065***	0.076***	0.068***	0.048***
	(0.005)	(0.007)	(0.007)	(0.007)
Share of municipality surface occupied by human settlement				0.209***
				(0.017)
Social and material vulnerability index				−0.186***
				(0.035)
Altimetric area				
Plain (ref)				
Coastal hill	0.740***	0.890***	0.548***	0.364*
	(0.137)	(0.171)	(0.190)	(0.196)
Coastal mountain	0.639**	0.722**	0.454	0.037
	(0.259)	(0.324)	(0.355)	(0.370)

(Continues)

Table 3. (Continued)

	Vibrant areas			
	(1)	(2)	(3)	(4)
	1971–2011	1971–1991	1991–2011	1991–2011
Inner hill	0.222*	0.232	0.201	0.245
	(0.113)	(0.143)	(0.154)	(0.159)
Inner mountain	−1.405***	−1.530***	−1.252***	−1.102***
	(0.123)	(0.156)	(0.168)	(0.174)
Coastal area (dummy)	−0.393***	−0.416***	−0.390***	−0.418***
	(0.109)	(0.136)	(0.150)	(0.152)
Tourist destination (dummy)	−0.764***	−0.823***	−0.713***	−0.741***
	(0.087)	(0.108)	(0.121)	(0.124)
Industrial district (SLL 2011) (dummy)	−0.165*	−0.107	−0.257**	−0.277**
	(0.086)	(0.107)	(0.121)	(0.124)
Natural amenities (dummy)	−0.159**	−0.178**	−0.186**	−0.064
	(0.066)	(0.083)	(0.092)	(0.093)
_const	2.806***	0.791	3.376***	23.720***
	(0.514)	(0.683)	(0.976)	(3.587)
Regional fixed effect	Yes	Yes	Yes	Yes
Obs.	20,609	12,338	12,401	12,401
Pseudo *R*-squared	0.287	0.251	0.349	0.363

Note: Standard errors are in parenthesis.
****p < 0.01; **p < 0.05; *p < 0.1.*

but provision of services and job, and more generally future prospects, certainly play a role.

The result on social and material vulnerability is very insightful also from a policy perspective: the higher it is, the lowest the vibrancy of places, meaning that welfare and quality of life are a pre-condition for a peripheral territory to demographically prosper.

Economic features are consistent with previous literature regarding local development determinants (see Section 3) demonstrating how demographic and economic geography, although not always necessarily overlapping, are nevertheless intertwined, mutually shaping each other. Interestingly, the strong and positive significance holding constant over time of female employment is very noteworthy – especially in light of the significant results regarding the presence of children. This underlines once again how women' participation to the labour market, and hence the availability of parenting support services or more generally specific welfare measures to facilitate the reconciliation between working and private life, is a key enabling factor for positive demographic development and it should be, by implication, one of the cornerstones of any 'vibrancy-aiming policy'.

While business density has some explanatory power in the first sub-periods considered – when a job close to home and an acceptable travel to work time (concepts somehow related to that of districts, see later) were important factors when deciding to settle or remain in a territory – in recent times improvements in physical and immaterial connections to working places may be behind the reduction up to insignificant values in models 3 and 4. Also, as explained later, this seems to confirm the weakening of districts due to a progressively increase of the globalisation of the economy.

As for the local economic structure, consistently to what we found in the previous model, the availability of differentiated business opportunities offered by the third sector holds a constant positive role. These results seem to suggest that vibrant Inner areas are essentially those that have managed to hook the tertiarisation of the economy, diversifying business and occupation offers, resulting attractive for old and new residents. These results pair with – and somehow confirm – the one related to occupation in agriculture (strongly negatively correlated with vibrancy) confirming once more the historic tendency started in the 30s. In this sense, the negative and high significant values of occupation in the primary sector – particularly evident in models 1 to 3, and in model 4, although lower in significance but still negative – coupled with the highly significant and negative value of medium- and low-skilled workers (including farmers) – demonstrate that territories that have remained mostly based on a rural economy have not grown.

Finally, the persistence of the high significance and negative correlation of inter-generational substitutability represented by the generational turnover index seems to imply that younger generations rarely step in into family businesses.

The geographical control variables introduced in the model show some interesting findings that call for a specific detailed description. All variables display high level of significance without influencing the results of other variables hence representing an additional level of information useful for investigating the phenomenon.

In terms of orographic characteristics, the more the altitude the less the vibrancy of places. Inner mountain municipalities hold significant and negative throughout all the periods considered, implying that remoteness still plays a crucial role in explaining demographic patterns and it is more likely associated with slow-burning phenomena. The positive significativity of coastal mountains should not be misleading in this sense: when geographically juxtaposed to inner mountains, it can be shown that they represent a more favourable settling environment. As a matter of fact, these territories, small in numbers, are mainly located in Calabria and Sicilia close to harsh mountain chains.

Tourism, natural amenities (proxied by the presence of national natural reserves) or closeness to the sea are confirmed as important leverages for the local economy in line with literature (Che 2006), but they do not seem to be enough to prevent or stop slow-moving pressures or, put it in another way, to foster adaptability. The persistent high significant and negative sign of these assets across all models confirm the findings of previous studies (Biagi *et al.* 2011) casting doubt on their role as features able to drive the choice to remain in an Inner area.

The negative results of industrial districts, paired with the previous finding on business

density, are consistent with the decline experienced by these territorially embedded economic aggregations hit by globalisation after 1991 and their progressive loss of relevance in driving vibrancy behaviour as it was the case in previous times of the Italian economy, especially in some parts of the country (the so-called Third Italy).

Finally, the results obtained in terms of regional fixed effects by significance along the four models show a geographically random and undistributed pattern.

The absence of any spatially identifiable cluster holding over time highlights that there are no regional or macro-area features which strongly influence population decline. Rather, the phenomenon can be found in any location where specific factors, such as low presence of young generations, low change in class structure and high social inequalities, are at play. This thus proves that depopulation is not a North vs. South issue, as is commonly the case for other challenges in Italy, but a nation-wide priority.

CONCLUSIONS

With the aim of contributing to fill the gap of evidence-based knowledge on the factors enabling places to thrive despite their peripherality, which are more often rather characterised by slow-burning challenges connected to their marginal condition, our paper, exploring the Italian case, shows that, despite a general association of peripheral areas as being home of stagnation in population growth or even irreversible depopulation (Copus *et al.* 2006), not all non-core areas are declining (Bryden & Munro 2000; Rizzo 2016), against a backdrop of a national demographic dynamics characterised by zero growth (Eurostat 2019; ISTAT 2021).

Building on existing literature, we used two driving definitions to frame our study. First, the one of adaptability/adaptive capacity proposed by Martin and Sunley (2015, p. 4) as the 'capacity of a system to maintain core performances despite shocks by adapting its structure, functions and organization'. Second, the one of peripheral area as a territory distant from a main service provision centre, following the interpretation and operational classification provided by the Italian National Strategy for Inner Areas.

To empirically infer the determinants of the adaptability of territories to a given condition of peripherality, we assumed population variation as our dependent variable since we deem it to be a salient key in intercepting adaptive capacity in the face of prolonged challenges.

By means of data provided by the Italian National Institute of Statistics collected across five censuses (1971, 1981, 1991, 2001 and 2011), we run a two-step regression analysis assuming a direct association between a constant positive demographic variation having occurred from 1971 to 2011 and a multi-dimensional set of specific socio-economic factors and territorial fixed conditions. This allowed us to explore a wide spectrum of possible determinants of adaptability to peripherality.

Very interestingly, we found that the main factors affecting the vibrancy of peripheral places which hold their explanatory power over time are the following: a differentiated and rich economic environment able to capture the opportunities offered by the tertiarisation of the economy, high level of female employment, and a low exposure to the risk of social and material vulnerability, making them crucial factors to be considered when aiming to retain population in peripheral areas from a policy perspective.

Other factors, in particular for what concerns Inner areas, vary depending on the considered time period, as is the case for population density, tertiary school education or local occupation opportunities.

What is worth noticing is that even though high level of human capital does not seem to play a significant role in explaining the vibrancy of a territory, probably due to the fact that these areas have severely suffered from out-migration of the younger and more educated segment of the population, what appears undeniable is that the complete lack of it is detrimental to the adaptive capacity of marginal areas.

Finally, as also observed elsewhere (Biagi *et al.* 2011), we found that morphological features and natural and cultural amenities do not seem to act as pulling factors towards non-core areas despite their potential for economic exploitation.

These interesting insights call for further investigations on what the possible determinants of adaptability to peripherality might be. The triggering mechanisms leading to a sustainable growth path in the face of all sorts of chronic

shocks and in a larger context of population stagnation, that is the driving force(s) allowing a peripheral place not to remain locked into a declining spiral, are still to be thoroughly understood. The theoretical conceptualisation and the empirical evidence produced in this study may be a first step forward towards this ambitious goal.

The findings of this first exploratory study as well as future research avenues which might stem from it in the same or in close directions can offer policy guidance to government agencies and all-level decision makers to formulate place-sensitive strategies to design effective demographic stability policies and to respond or adapt to long-term disturbances, hence tackling the longstanding issues of lagging-behind areas, spatial disparities and the urban–rural dichotomy.

The recent outbreak of the COVID-19 pandemic – and the related severe enduring pressures that are challenging already vulnerable territories such as peripheral ones – has made the production of evidence-based knowledge on the adaptive capacity of territories in the face of more or less long-run social, political or environmental stresses an absolute policy imperative for the upcoming years.

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Endnotes

1 A detailed description of Italian migration patterns is provided in Annex 1(see Supplemental Material Data S1).
2 A brief description of the Italian National Strategy for Inner areas is provided in Annex 2 (see Supplemental Material Data S1).
3 Agriculture censuses were held instead in 1970, 1982, 1990, 2000 and 2010.
4 A detailed description of all variables and their sources is provided in Annex 3 (see Supplemental Material Data S1).
5 For a more detailed definition see ISTAT (1997, 2005).
6 The complete set of regressions, showing results for both vibrant and switching municipalities, are provided in Annex 4 (see Supplemental Material Data S1).

REFERENCES

Accetturo, A., M. Cascarano & G. de Blasio (2019), Dynamics of Urban Growth: Italy, 1951–2011. *Economia Politica* 36(2), pp. 373–398.

Adger, W.N. & K. Vincent (2005), Uncertainty in Adaptive Capacity. *Comptes Rendus - Geoscience* 337(4), pp. 399–410. https://doi.org/10.1016/j.crte.2004.11.004.

Aldrich, D.P. (2012), *Building Resilience: Social Capital in Post-disaster Recovery*. Chicago: University of Chicago Press.

Bassett, T.J. & C. Fogelman (2013), Déjà vu or Something New? The Adaptation Concept in the Climate Change Literature. *Geoforum* 48, pp. 42–53. https://doi.org/10.1016/j.geoforum.2013.04.010.

Beeson, P.E., D.N. DeJong & W. Troesken (2001), Population Growth in US counties, 1840–1990. *Regional Science and Urban Economics* 31(6), pp. 669–699. https://doi.org/10.1016/S0166-0462(01)00065-5.

Belcher, J.C. & F.L. Bates (1983), Aftermath of Natural Disasters: Coping Through Residential Mobility. *Demography* 7, pp. 118–128. https://doi.org/10.1111/j.1467-7717.1983.tb00805.x.

Biagi, B., A. Faggian & P. McCann (2011), Long and Short Distance Migration in Italy: The Role of Economic, Social and Environmental Characteristics. *Spatial Economic Analysis* 6(1), pp. 111–131. https://doi.org/10.1080/17421772.2010.540035.

Bijker, R.A. & T. Haartsen (2012), More than Counter-urbanisation: Migration to Popular and Less-popular Rural Areas in The Netherlands. *Population, Space and Place* 18(5), pp. 643–657. https://doi.org/10.1002/psp.687.

Bonifazi, C. & F. Heins (2003), Testing the Differential Urbanisation Model for Italy. *Tijdschrift voor economische en sociale geografie* 94(1), pp. 23–37. https://doi.org/10.1111/1467-9663.00234.

Bonifazi, C., F. Heins, F. Licari & E. Tucci (2020), The Regional Dynamics of Internal Migration Intensities in Italy. *Population, Space and Place*, 27(2), p. e2331. https://doi.org/10.1002/psp.2331.

Boschma, R. (2015), Towards an Evolutionary Perspective on Regional Resilience. *Regional Studies* 49(5), pp. 733–751. https://doi.org/10.1080/00343404.2014.959481.

Bristow, G. & A. Healy (2015), Crisis Response, Choice and Resilience: insights from Complexity Thinking. *Cambridge Journal of Regions, Economy and Society* 8(2), pp. 241–256. https://doi.org/10.1093/cjres/rsv002.

Bryden, J. & G. Munro (2000), New Approaches to Economic Development in Peripheral Rural Regions. *Scottish Geographical Journal* 116(2), pp. 111–124. https://doi.org/10.1080/00369220018737085.

Capdevila, P., I. Stott, M. Beger & R. Salguero-Gómez (2020), Towards a Comparative Framework of Demographic Resilience. *Trends in Ecology and Evolution*, 35(9), pp. 776–786. https://doi.org/10.1016/j.tree.2020.05.001.

Chamlee-Wright, E. (2010), *The Cultural and Political Economy of Recovery: Social Learning in a Post-disaster Environment*, Vol. 12. London: Routledge.

Che, D. (2006), Developing Ecotourism in First World, Resource-dependent Areas. *Geoforum* 37(2), pp. 212–226.

Cheshire, P.C. & S. Magrini (2006), Population Growth in European Cities: Weather Matters But Only Nationally. *Regional Studies* 40, pp. 23–37. https://doi.org/10.1080/00343400500449259.

Chi, G. & S.J. Ventura (2011), An Integrated Framework of Population Change: Influential Factors, Spatial Dynamics, and Temporal Variation. *Growth and Change* 42(4), pp. 549–570. https://doi.org/10.1111/j.1468-2257.2011.00567.x.

Colucci (2019), Antichi percorsi, nuove mobilità: le migrazioni interne. *In*: A. De Rossi, ed., *Riabitare l'Italia. Le aree interne tra abbandoni e riconquiste*, pp. 317–323. Roma: Donzelli.

Compagnucci, F. & G. Morettini (2020), Improving Resilience at the Local Level: The Location of Essential Services within Inner Areas. Three Case Studies in the Italian Marche Region. *Regional Science Policy and Practice* 12(5), pp. 767–792. https://doi.org/10.1111/rsp3.12343.

Copus, A., Hall, C., Barnes, A., Dalton, G., Cook, P., Weingarten, P., Baum, S., Stange, H., Lindner, C., Hill, A., Eiden, G., Mcquaid, R., Grieg, M., and Johansson, M. (2006). *Study on Employment in Rural Areas*. Study commissioned by European Commission Directorate General for Agriculture. Available at https://core.ac.uk/download/pdf/74032988.pdf

Danson, M. & P.D. Souza (2012), Periphery and Marginality: definitions, Theories, Methods and Practice. *In*: M. Danson & P.D. Souza, eds., *Regional Development in Northern Europe: Peripherality, Marginality and Border Issues*. Abindon: Routledge.

Dawley, S., A. Pike & J. Tomaney (2010), Towards the Resilient Region? *Local Economy* 25(8), pp. 650–667. https://doi.org/10.1080/02690942.2010.533424.

Dubé, J. & M. Polèse (2016), Resilience Revisited: Assessing the Impact of the 2007–09 Recession on 83 Canadian Regions with Accompanying Thoughts on an Elusive Concept. *Regional Studies* 50(4), pp. 615–628. https://doi.org/10.1080/00343404.2015.1020291.

Duranton, G. (2016), Determinants of City Growth in Colombia. *Papers in Regional Science* 95(1), pp. 101–131. https://doi.org/10.1111/pirs.12225.

Duranton, G. & M.A. Turner (2012), Urban Growth and Transportation. *Review of Economic Studies* 79(4), pp. 1407–1440. https://doi.org/10.1093/restud/rds010.

Eurostat. (2019). Eurostat population projections.

Faggian, A., R. Gemmiti, T. Jaquet & I. Santini (2018), Regional Economic Resilience: The Experience of the Italian Local Labor Systems. *Annals of Regional Science* 60(2), pp. 393–410. https://doi.org/10.1007/s00168-017-0822-9.

Faggian, A., I. Rajbhandari & K.R. Dotzel (2017), The Interregional Migration of Human Capital and its Regional Consequences: A Review. *Regional Studies* 51(1), pp. 128–143. https://doi.org/10.1080/00343404.2016.12633.

Fantechi, F., G. Urso & M. Modica (2020), Can Extreme Events be an Opportunity? Depopulation and Resilience of Rural Communities in Central Italy after the 1997 Earthquake. *Journal of Rural Studies* 79, pp. 311–321. https://doi.org/10.1016/j.jrurstud.2020.08.047.

Ferrão, J. & R. Lopes (2004), Understanding Peripheral Rural Areas as Contexts for Economic Development. *In*: L. Labrianidis, (ed.), *The Future of Europe's Rural Peripheries*, pp. 31–61. Aldershot: Ashgate.

Fornasin, A. & C. Lorenzini, eds. (2019), *Via dalla montagna: 'Lo spopolamento montano in Italia' (1932–1938) e la ricerca sull'area friulana di Michele Gortani e Giacomo Pittoni*. Udine: Forum Edizioni.

Gallopín, G.C. (2006), Linkages Between Vulnerability, Resilience, and Adaptive Capacity. *Global Environmental Change* 16(3), pp. 293–303. https://doi.org/10.1016/j.gloenvcha.2006.02.004.

Gong, H. & R. Hassink (2017), Regional Resilience: The Critique Revisited. *In*: N. Williams & T. Vorley, (eds.), *Creating Resilient Economies*, pp. 206–216. Cheltenham: Edward Elgar.

Gong, H., R. Hassink, J. Tan & D. Huang (2020), Regional Resilience in Times of a Pandemic Crisis: The Case of COVID-19 in China. *Tijdschrift voor economische en sociale geografie* 111(3), pp. 497–512.

Gosnell, H. & J. Abrams (2009), Amenity Migration: Diverse Conceptualizations Of Drivers, Socioeconomic Dimensions, and Emerging Challenges. *GeoJournal* 76, pp. 303–322. https://doi.org/10.1007/s10708-009-9295-4.

Hassink, R. (2010), Regional Resilience: A Promising Concept to Explain Differences in Regional Economic Adaptability? *Cambridge Journal of Regions, Economy and Society* 3(1), pp. 45–58.

Hu, X. & R. Hassink (2017), Exploring Adaptation and Adaptability in Uneven Economic Resilience: A Tale of Two Chinese Mining Regions. *Cambridge Journal of Regions, Economy and Society* 10(3), pp. 527–541. https://doi.org/10.1093/cjres/rsx012.

Hu, X. & R. Hassink (2020), Adaptation, Adaptability and Regional Economic Resilience: A Conceptual Framework. *In*: G. Bristow & A. Healy, eds., *Handbook on Regional Resilience*, pp. 54–68. Cheltenham: Edward Elgar.

Huang, T.L., P.F. Orazem & D. Wohlgemuth (2002), Rural Population Growth, 1950–1990: The Roles of Human Capital, Industry Structure, and Government Policy. *American Journal of Agricultural Economics* 84(3), pp. 615–627. https://doi.org/10.1111/1467-8276.00323.

Iammarino, S., A. Rodríguez-Pose & M. Storper (2018), Regional Inequality in Europe: Evidence, Theory and Policy Implications. *Journal of Economic Geography* 19(2), pp. 273–298. https://doi.org/10.1093/jeg/lby021.

Ifejika Speranza, C., U. Wiesmann & S. Rist (2014), An Indicator Framework for Assessing Livelihood Resilience in the Context of Social-ecological Dynamics. *Global Environmental Change* 28(1), pp. 109–119. https://doi.org/10.1016/j.gloenvcha.2014.06.005.

INEA (1932–1938), *Lo spopolamento montano in Italia. Indagine geografico-economico-agraria*, a cura del Comitato per la geografia del Consiglio nazionale delle ricerche e dell'Istituto nazionale di economia agraria; 1932, vol. I, *Le Alpi liguri-piemontesi*, tomo I, *Note introduttive e riassuntive. Provincie di Novara, Vercelli ed Aosta*, Treves-Treccani- Tumminelli, Milano Roma; tomo II, *Provincie di Torino, Cuneo ed Imperia*, Treves- Treccani-Tumminelli, Milano-Roma; 1934, supplemento, *Provincia di Novara*, Tipografia Failli, Roma; 1935, vol. II, *Le Alpi lombarde*, Tipografia Failli, Roma; 1935, vol. III, *Le Alpi trentine*, tomo I, Note antropogeografiche e note riassuntive. *Provincia di Bolzano*, Tipografia Failli, Roma; tomo II, *Provincia di Trento*, Tipografia Failli, Roma; 1938, vol. IV, *Le Alpi venete*, Tipografia Failli, Roma; 1937, vol. V, *Le Alpi giulie*, Tipografia Failli, Roma; 1934, vol. VI, *L'Appennino emiliano- tosco-romagnolo*, Treves, Milano; 1937, vol. VII, *L'appennino abruzzese-laziale*, Tipografia Failli, Roma; 1938, vol. VIII, U. Giusti, Relazione generale, Tipografia Failli, Roma: (Studi e monografie, 16).

IPCC (2001), *Climate Change 2001: The Scientific Basis. Contribution of Working Group I to the Third Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge: Cambridge University Press.

ISTAT. (1997), *I sistemi locali del lavoro 1991*. Roma: ISTAT.

ISTAT. (2005), *I sistemi locali del lavoro. Censimento 2001*. Roma: ISTAT.

ISTAT. (2011), *L'Italia in 150 anni. Sommario di statistiche storiche 1861–2010*. Roma: ISTAT.

ISTAT. (2017), *Forme, livelli e dinamiche dell'urbanizzazione in Italia*. Roma: ISTAT.

ISTAT. (2019), *L'evoluzione demografica in Italia dall'Unità a oggi*. Roma: ISTAT.

ISTAT (2020), *Annual Report 2020 – The State of the Nation*, Roma: ISTAT.

ISTAT. (2021), *Households and Population Projections*. Roma: ISTAT.

Jacobs-Crisioni, C. & E. Koomen (2017), Population Growth, Accessibility Spillovers and Persistent Borders: Historical Growth in West-European Municipalities. *Journal of Transport Geography* 62, pp. 80–91. https://doi.org/10.1016/j.jtrangeo.2017.05.008.

Knapp, T.A. & P.E. Gravest (1989), On the Role of Amenities in Models of Migration and Regional Development. *Journal of Regional Science* 29(1), pp. 71–87. https://doi.org/10.1111/j.1467-9787.1989.tb01223.x.

Love, H.A. & J. Freebairn (2022), Macroeconomic Linkages to the Agricultural Supply Chain. *In*: *Modern Agricultural and Resource Economics and Policy*, pp. 349–390. Cham: Springer.

Lucatelli, S. (2016), Strategia Nazionale per le Aree Interne: un punto a due anni dal lancio della Strategia. *Agriregionieuropa* 12(45). Available at <https://agriregionieuropa.univpm.it/it/content/article/31/45/strategia-nazionale-le-aree-interne-un-punto-due-anni-dal-lancio-della>.

Lutz, W. & R. Qiang (2002), Determinants of Human Population Growth. *Philosophical Transactions of the Royal Society of London. Series B: Biological Sciences* 357(1425), pp. 1197–1210. https://doi.org/10.1098/rstb.2002.1121.

Manca, A.R., P. Benczur & E. Giovannini (2017), *Building a Scientific Narrative Towards a More Resilient EU Society, Part 1: A Conceptual*

Framework, Luxembourg: Publications Office of the European Union. JRC106265. https://doi.org/10.2760/635528.

Martin, R. & P. Sunley (2015), On the Notion of Regional Economic Resilience: Conceptualization and Explanation. *Journal of Economic Geography* 15(1), pp. 1–42. https://doi.org/10.1093/jeg/lbu015.

Martin, R., P. Sunley, B. Gardiner & P. Tyler (2016), How Regions React to Recessions: Resilience and the Role of Economic Structure. *Regional Studies* 50(4), pp. 561–585. https://doi.org/10.1080/00343404.2015.1136410.

Moulaert, F. (1996), Rediscovering Spatial Inequality in Europe: Building Blocks for an Appropriate 'Regulationist' Analytical Framework. *Environment and Planning D: Society and Space* 14(2), pp. 155–179. https://doi.org/10.1068/d140155.

Partridge, M., R.D. Bollman, M.R. Olfert & A. Alasia (2007), Riding the Wave of Urban Growth in the Countryside: Spread, Backwash, or Stagnation? *Land Economics* 83(2), pp. 128–152.

Pendall, R., K.A. Foster & M. Cowell (2010), Resilience and Regions: Building Understanding of the Metaphor. *Cambridge Journal of Regions, Economy and Society* 3(1), pp. 71–84. https://doi.org/10.1093/cjres/rsp028.

Pezzi, M.G. & G. Urso (2017), Coping with Peripherality: Local Resilience Between Policies and Practices. Editorial Note. *Italian Journal of Planning Practice* 7(1), pp. 1–23.

Pike, A., S. Dawley & J. Tomaney (2010), Resilience, Adaptation and Adaptability. *Cambridge journal of regions, economy and society* 3(1), pp. 59–70.

Pirotte, A. & J.L. Madre (2011), Determinants of Urban Sprawl in France: An Analysis Using a Hierarchical Bayes Approach on Panel Data. *Urban Studies* 48(13), pp. 2865–2886. https://doi.org/10.1177/0042098010391303.

Reghezza-Zitt, M., S. Rufat, G. Djament-Tran, A.L. Blanc & S. Lhomme (2012), What Resilience Is Not: Uses and Abuses. *Cybergeo: European Journal of Geography* 621, pp. 1–23. https://doi.org/10.4000/cybergeo.25554.

Rizzo, A. (2016), Declining, Transition and Slow Rural Territories in Southern Italy Characterizing the Intra-rural Divides. *European Planning Studies* 24(2), pp. 231–253. https://doi.org/10.1080/09654313.2015.1079588.

da Silva, D.F.C., J.P. Elhorst & R. Da Mota Silveira Neto (2017), Urban and Rural Population Growth in a Spatial Panel of Municipalities. *Regional Studies* 51(6), pp. 894–908. https://doi.org/10.1080/00343404.2016.1144922.

Storper, M. & A.J. Scott (2016), Current Debates in Urban Theory: A Critical Assessment. *Urban Studies* 53(6), pp. 1114–1136. https://doi.org/10.1177/0042098016634002.

SVIMEZ (2019), *Rapporto Sull'economia del Mezzogiorno*, Bologna: Il Mulino.

Train, K. (2003), *Discrete Choice Methods with Simulation*. Cambridge: Cambridge University Press.

Urso, G. (2016), Polycentric Development Policies: A Reflection on the Italian 'National Strategy for Inner Areas'. *Procedia-Social and Behavioral Sciences* 223, pp. 456–461.

Urso, G., M. Modica & A. Faggian (2019), Resilience and Sectoral Composition Change of Italian Inner Areas in Response to the Great Recession. *Sustainability (Switzerland)* 11(9), 2679. https://doi.org/10.3390/su11092679.

UVAL (2014), *A Strategy for Inner Areas in Italy: Definition, Objectives, Tools and Governance*, Vol. 31, Roma: Materiali Uval Series.

Viesti, G. (2021), *Centri e periferie: Europa, Italia, Mezzogiorno dal XX al XXI secolo*. Bari: Laterza.

Walker, J. & M. Cooper (2011), Genealogies of Resilience: From Systems Ecology to the Political Economy of Crisis Adaptation. *Security Dialogue* 42(2), pp. 143–160. https://doi.org/10.1177/0967010611399616.

Whitney, C.K., N.J. Bennett, N.C. Ban, E.H. Allison, D. Armitage, J.L. Blythe, J.M. Burt, W. Cheung, E.M. Finkbeiner, M. Kaplan-Hallam, I. Perry, N.J. Turner & L. Yumagulova (2017), Adaptive Capacity: From Assessment to Action in Coastal Social-ecological Systems. *Ecology and Society* 22(2), 22. https://doi.org/10.5751/ES-09325-220222.

Xiao, Y. & S. Van Zandt (2012), Building Community Resiliency: Spatial Links Between Household and Business Post-disaster Return. *Urban Studies* 49(11), pp. 2523–2542. https://doi.org/10.1177/0042098011428817.

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