



Rise (and Decline) of European Migrants in Greece: Exploring Spatial Determinants of Residential Mobility (1988–2017), with Special Focus on Older Ages

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Abstract

Aging, European Union consolidation, and human mobility across countries are three entangled processes making the Mediterranean region of Europe an attractive retirement place thanks to mild climate and lower costs of living. Residential mobility of retired workers in Europe has grown rapidly since the 1980s because of increased wealth, transportation improvements, and flexibility of working lives. However, residential mobility after retirement was occasionally investigated in relation with economic cycles; recession was hypothesized to negatively impact residential mobility from Northern/Western/Central Europe to Mediterranean countries. Considering economic and population dynamics over the last three decades, the present work documents the drastic reduction in the number of European immigrants in Greece after the 2007 recession, with the exception of retirees. Job shortage and worse socioeconomic conditions were demonstrated to alter settlement patterns and location preferences of migrants at both younger and older ages. Results of our study suggest a rethinking of the role of spatial planning and developmental measures in local communities less organized to host increasing flows of retirees from Northern Europe. Being increasingly required to provide services for aging population, social policies should reconcile retirement migration with internal demographic dynamics and the specificity of local contexts, promoting finely tuned taxation systems and appropriate spatial infrastructures.

Keywords Residential mobility · International retirement migrants · Crisis · Southern Europe

Introduction

Residential mobility has grown rapidly since the 1980s thanks to increased international experiences and mobility, ease of movement, flexibility of working lives

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(Gustafson 2009; Hannonen 2018; Muñoz 2018). Internal migration within Europe can be related back to the 1992 Maastricht Treaty, which allowed free movement of European individuals within the Union's boundaries and gave them the chance to export their rights to healthcare and other social security schemes (King et al. 1998, 2000; Coldron and Ackers 2007; Hall and Hardill 2016). Retirees in Europe embody a non-negligible part of migrant population that changes place of residence, seeking a better life quality in other places (Williams et al. 1997; Warnes and Williams 2006; Repetti et al. 2008; Parreño-Castellano and Dominguez-Mujica 2016; Bolzman et al. 2017; Gehring 2018). Retirement migration depicts a kind of residential mobility (King et al. 2000; Gustafson 2002, 2008, 2009; Longino et al. 2002; Hall and Hardill 2016) in search for “self-fulfillment” or the “good life” at older ages (Truly 2002; Giner-Monfort et al. 2016; Oliver 2017; Campos 2018).

Migration at older ages is a relevant issue in the field of demography and social policy, particularly in Mediterranean countries (Casado-Diaz et al. 2004; Rodríguez et al. 2004; Hannonen 2018). The concept of “International Retirement Migrants” (IRMs) proposed by King et al. (2000), basically refers to Northern European retirees who decide to live (seasonally or permanently) in Southern Europe as “residential tourists” or “lifestyle movers” (Williams et al. 2000; Zontini 2015; Gavanias and Calzada 2016). Four kinds of retired European immigrants were identified: (i) who had gone from being tourists to being residents, whose chief explanations for emigrating were the enhancement of their life quality owing to, e.g., mild climate and lower cost of living; (ii) who both worked and retired in the destination country; (iii) people retired in their country of origin and regrouped with their family; and (iv) who immigrated to southern countries to come in a dwelling for old people, since it is cheaper than in (origin) countries (Williams et al. 1997; Campos 2018; Hall and Müller 2018). Portugal, Spain, Greece, and Italy are likely the preferred countries by people in retirement age (or close to it) from Northern and Central European countries (Rodríguez et al. 1998, 2004; King et al. 2000; Muñoz 2018). In this regard, Mediterranean coastal regions are the favored location of retirees thanks to mild climate and lower costs of living (Williams et al. 2000; Gustafson 2002, 2009; Casado-Diaz et al. 2004).

A wider tendency of European aging population to mobility reflects social consequences that were studied in specific background contexts (Burholt 2004; King and Vullnetari 2006; White 2006). Lack of knowledge is not justified when considering the socioeconomic influence that this population segment exerts on both countries of origin and new settlement (Zontini 2015). For instance, residential development—and especially second-home settlements along the sea coasts and in rural countryside—was sustained by foreign (elder) population settled in smaller land plots and specific housing typologies (Hardill et al. 2005; Hall and Hardill 2016; Morote et al. 2017). Changes over time in migration patterns and location choice of specific population segments reflect different social conditions at local scale and important economic transformations at regional and national scale (Kashnitsky et al. 2017). In this context, a comprehensive understanding of locational choice of older movers may derive from a broader analysis of migration dynamics over time, distinguishing settlement preferences of younger and older migrants during phases of economic expansion and recession.

Earlier research has focused on the reason(s) underlying older people to move abroad after retirement, considering together lifestyles and social networks (King et al. 2000; Casado-Diaz et al. 2004; Gustafson 2009). However, retirement flows were

less studied in relation to economic dynamics of the hosting country (e.g., Stergiou et al. 2017). Based on these premises, the present study links medium-term economic dynamics in Greece from the end of the 1980s to the present days with migratory dynamics analyzed by citizenship and age class, focusing primarily on resident population with citizenship of another European country. We assumed that the amount of (non-native) population with European citizenship moving to Greece in the last three decades has been influenced by short-term economic dynamics, progressively increasing during economic expansion in mid-2000 and gradually decreasing during the 2007 recession. In this regard, settlement choice of (non-native) Europeans migrating to Greece was investigated assuming that urban areas—with a more dynamic labor market—have attracted people with European citizenship during economic expansion, displaying more heterogeneous settlement patterns during crisis. Finally, the work hypothesizes a different age composition of residential movers to Greece—with dominant younger age groups during expansion and the reverse pattern during recession.

Greece is considered a paradigmatic case in the Mediterranean region. Being likely the country that has suffered the highest impact of crisis in Europe, Greece—a traditional emigration country up to the 1970s—was an increasingly important hotspot for international migration, similarly to other Mediterranean countries, such as Italy and Spain. In this context, a spatio-temporal analysis of residential mobility considering citizenship and age together provides a comprehensive overview of migration patterns that have greater impact on demographic processes on a local scale, contributing to reduce (or sharpen) territorial divides and shaping resilience potential and post-crisis recovery dynamics.

Methodology

Study Area

Greece (131,982 km²), the European country investigated in this study, is partitioned in 13 administrative regions and 316 municipalities (“*Kallikratis dimi*”) corresponding to the LAU-1 territorial level of the statistical classification adopted by Eurostat, the Statistical Office of European Union (Pili et al. 2017). Territorial divides are particularly evident since the metropolitan regions of Athens and Salonika concentrate together half of Greek population (Zitti et al. 2015). Internal, socially marginal and economically disadvantaged districts experienced a continuous depopulation in contrast with accelerated population dynamics typical of tourism-specialized areas along the sea coast (Carlucci et al. 2017). Residential mobility and migration in Greece have been taken as representative of more general population trends typical of urban-rural gradients in Southern Europe since the late 1950s (Morelli et al. 2014), being strongly influenced by economic cycles (Kasimis 2008). In the 1960s, metropolitan regions attracted an intense rural-urban migration (Maloutas 2007). While internal migration fueled urban expansion in the 1970s (Gkartzios 2013), migration flows in the 1980s were directed mostly to peri-urban areas (Sayas 2006), leading to stagnant population growth in core cities (Kotzamanis 1997). In the 1990s, more than one-half of the foreign European population living in Greece come from Northern Europe (Williams et al. 1997).

Demographic Data and Variables

Resident population by citizenship was investigated using data from three official sources: (i) the annual labor force survey, (ii) the national census of population and household, and (iii) the general population register, providing vital statistics and population estimates for the whole of Greece. An annual estimation of resident population by aggregated groups of citizenship (Greek, other EU countries, non-EU countries) disaggregated at the regional level (NUTS-2 level of European nomenclature of territorial statistical units) was derived for a relatively long time series (between 1988 and 2017) from the Greek Labor Force Survey held by the Hellenic Statistical Authority (ELSTAT). Percent shares of resident population with (i) Greek citizenship, (ii) other EU countries' citizenship, (iii) non-EU countries' citizenship in total population were calculated at the municipal scale from elementary data collected on behalf of the last population census held by ELSTAT in 2011. The amount of incoming residents by foreign citizenship (EU and non-EU countries) registered in Greece between 2008 and 2017 by age (5-years wide classes) was estimated from disaggregated data derived from the national population register (ELSTAT). Appropriate indicators quantifying percent share of incoming residents by age class and group of citizenship (EU and non-EU) in total incoming residents were finally proposed with the aim to estimate the amount of migratory movements at younger and older ages and from wealthier countries and emerging economies.

Contextual Variables

To identify basic characteristics of local contexts associated with a higher (or lower) concentration of European and non-European migrants, a socioeconomic profile was derived for each municipality of Greece ($n = 316$) considering 12 indicators that include (i) annual population growth rate (2001–2011, %), (ii) population density (inhabitants/km²), (iii) average number of inhabitants per dwelling, (iv) mean population age, (v) a population structural dependency index (calculated dividing the total number of people aged 0 to 14 and 65+ by the total number of people aged 15 to 64 years), (vi) percent share of singles in total population, (vii) average number of family components, (viii) participation rate, (ix) unemployment rate, (x) percent share of inhabitants with tertiary education level in total population, percent share of workers in (xi) industry, and (xii) services in total workforce. Indicators were derived from official statistics released by ELSTAT and referring to the last population census held in Greece (2011). Indicators were selected according to earlier studies in the same area (Di Felicianantonio and Salvati 2015; Colantoni et al. 2016; Salvati 2016).

Statistical Analysis

To analyze settlement patterns of European citizens in Greece, a principal component analysis (PCA) was run on the percent share of (non-native) residents with citizenship from any EU countries (excepting Greece) in total population by year and administrative region. Components with eigenvalue > 1 were considered in further analysis (Duvernoy et al. 2018). Component loadings and scores allowed identification of spatial similarities and differences in settlement patterns of Europeans across Greek

regions (loadings) and for specific intervals of the investigated time period (scores). A non-parametric Spearman correlation analysis was run to assess the relationship between three indicators of migration and residential mobility in Greece (percent share of foreign population in total population, percent share of Europeans in total foreign population, and percent share of non-Europeans in total foreign population), and 12 indicators profiling socioeconomic conditions in Greek municipalities (see “[Contextual variables](#)” section). Significance of pair-wise correlations was tested at $p < 0.05$ after Bonferroni’s correction for multiple comparisons.

A multiple linear regression was finally run on the percent share of Europeans in total population (dependent variable) with the aim to identify (and rank the importance of) contextual indicators (predictors, see “[Contextual variables](#)” section) associated with a higher (or lower) presence of this population segment in Greek municipalities. This cross-section analysis clarifies the role of space as a factor influencing the locational pattern of the Europeans moving to Greece. A forward stepwise regression approach was adopted; indicators were included in the model when the p -level associated to the respective Fisher-Snedecor F test was below 0.01. Results include slope coefficient estimates and the associated significance level (testing for the null-hypothesis of nonsignificant regression coefficient) based on Student t statistics. The goodness-of-fit of each regression was measured using adjusted R^2 and tested for significance (against the null hypothesis of nonsignificant model) through a Fisher-Snedecor F test with $p < 0.001$. All variables were standardized prior to analysis.

Results

The percent share of (non-native) population with non-Greek, EU citizenship in total Greek population increased from 0.1% in 1988 to 1.1% in 2008, decreasing moderately to 0.8% in 2017 (Table 1). At the beginning of the study period, the regions with the highest share of European residents in Greece were Attica and Western Macedonia (0.3%), followed by Ionian islands (0.2%). In the remaining regions, the share was systematically below 0.1%. Ten years later, Attica remained the region with the highest share of European residents in total population. However, Ionian islands, Crete, and the Southern Aegean district hosted a rising share of Europeans in total population ($> 0.2\%$). With economic expansion, Europeans settling in Greece increased in specific local contexts, mainly in Attica (1.9% in 2008). Crete and the Ionian islands displayed a particularly high concentration of Europeans (1.8%), followed by Southern Aegean and Peloponnese regions (respectively 1.3% and 1.2%). Less than 1% of Europeans in total resident population settled in the remaining Greek regions. The percent share of Europeans in Attica declined at the end of recession (0.9%); Crete (1.9%), Peloponnese (1.8%), Ionian islands (1.5%), and Southern Aegean islands (1%) concentrated the highest proportion of Europeans in 2017.

Figure 1 illustrates the results of a multivariate analysis investigating spatio-temporal trends in the share of (non-native) residents with EU citizenship in total population of Greece. Principal component analysis extracted two axes explaining more than 83% of total variance, namely 64.9% on the first axis and 18.6% on the second axis. The empirical findings of the PCA discriminate a homogeneous group of Greek regions (negative side of component 1) with a systematically low concentration of Europeans during the study period from a smaller number of regions (Peloponnese, Crete, Attica,

Table 1 Percent share of non-native residents with (non-Greek) EU citizenship in total population by year and administrative region in Greece

Region	1988	1998	2008	2017
Eastern Macedonia—Trace	0.01	0.04	0.49	0.32
Attica	0.26	0.27	1.86	0.94
Western Greece	0.09	0.05	0.47	0.59
Western Macedonia	0.25	0.03	0.46	0.53
Ionian islands	0.19	0.26	1.75	1.46
Epirus	0.07	0.05	0.43	0.57
Central Macedonia	0.08	0.11	0.43	0.39
Crete	0.06	0.21	1.85	1.90
Southern Aegean	0.06	0.20	1.26	0.99
Peloponnese	0.03	0.12	1.23	1.84
Central Greece	0.04	0.06	0.90	0.87
Thessaly	0.08	0.07	0.81	0.19
Northern Aegean	0.00	0.06	0.50	0.31
Greece	0.14	0.18	1.15	0.81

Ionian islands, Southern Aegean) with a higher concentration of Europeans. The amount of this population segment increased heterogeneously over time (in coastal regions) or decreased with recession after a continuous increase since 1988 (in Attica). Results of the analysis also identified four homogenous time intervals as far as trends in non-native, European population is concerned: a major group of years between 1988 and 2003, with slightly increasing proportion of Europeans in total resident population and stable distribution across Greek regions. The subsequent years were characterized by an accelerated inflow of Europeans in Greece, likely driven by economic expansion and increasing residential mobility at older ages. However, this period was characterized by relatively heterogeneous dynamics: after 3 years (2004–2006) of accelerated inflows and spatial re-distribution of European migrants across regions, the next few years (2007–2008) had similar dynamics with those observed in the most recent period (2016–2017). In those years, non-Greek European residents increased in coastal districts, and decreased in urban areas, especially in the Athens' metropolitan region. The years between 2009 and 2015 were characterized by economic recession leading to a lower share of non-Greek European residents in total population. The largest decrease was recorded in urban areas (Athens and Salonika), industrial regions (e.g., Viotia, Western and Eastern Macedonia), and some internal regions devoted to agriculture.

The age composition of incoming residents in Greece was investigated during the last decade (recession), classifying new residents by citizenship (EU countries excluding Greece and non-EU countries). The absolute number of incoming residents was relatively stable around 60,000 between 2008 and 2015, increasing in 2016 and 2017 (Table 2). The percent share of new residents from EU countries in total incoming residents increased from 17.5% (2008) to 27.2% (2014) and decreased rapidly in the next 3 years. Moreover, the percent share of new residents from EU countries with 60 years and above in total EU new residents in Greece increased from 4.9% (2008) to 8.9% (2017).

The spatial distribution of selected demographic indicators was illustrated in Fig. 2, considering census data at 2011 aggregated at the spatial level of municipalities. Native Greeks (resident population born in Greece and with Greek citizenship) concentrated in internal, rural areas of central and northern Greece, representing more than 95% of resident population. By contrast, non-native population with non-Greek citizenship concentrated in accessible districts, accounting for more than 15% of resident population. However, non-native residents with EU and non-EU citizenships showed a different spatial distribution in Greece. Europeans settled preferentially in coastal areas of Ionian and Aegean districts, in coastal Peloponnese, Crete, Magnissia, and Chalkidiki—two coastal regions located respectively in Thessaly and Macedonia—but also in more urbanized contexts (Athens, Volos, Larissa, Nafplion, Salonika, Patras). Spatial concentration of non-native population in coastal areas was less evident for non-EU citizens, settling primarily in the industrial areas around Athens (e.g., Viotia, northern Attica, Korinthias) and in selected coastal districts (Lakonia, Piraeus' prefecture).

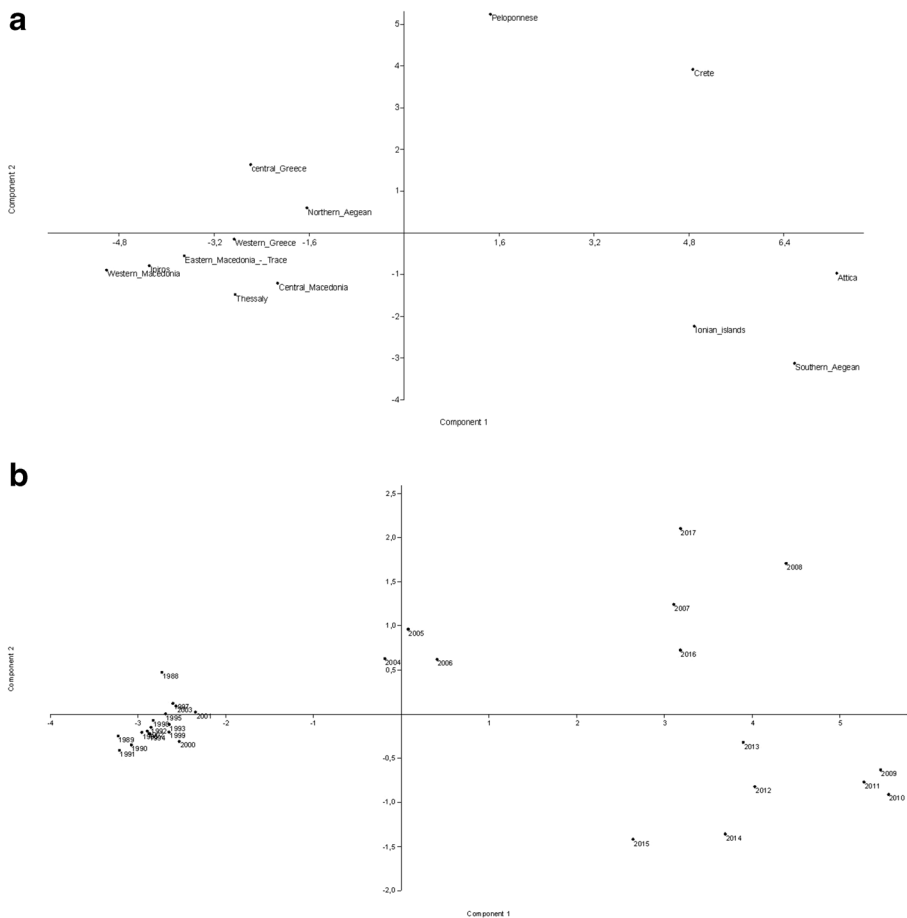


Fig. 1 Principal component analysis illustrating spatio-temporal trends in the per cent share of non-native residents with (non-Greek) EU citizenship in total population of Greece. **a** Component loadings (Greek regions). **b** Component scores (years)

Table 2 Statistics on incoming residents in Greece by year and age

Year	Incoming residents	With EU citizenship	< 60 years	60 years and above	% share of EU new residents	% share of > 60 years EU new residents in total EU new residents
2008	66.529	11.638	11.073	565	17.5	4.9
2009	58.613	12.205	11.487	718	20.8	5.9
2010	60.462	12.732	11.826	906	21.1	7.1
2011	60.089	12.945	11.992	953	21.5	7.4
2012	58.200	14.451	13.409	1.042	24.8	7.2
2013	57.946	15.056	13.972	1.084	26.0	7.2
2014	59.013	16.043	14.636	1.407	27.2	8.8
2015	64.446	16.572	15.118	1.454	25.7	8.8
2016	116.867	16.706	15.226	1.480	14.3	8.9
2017	112.247	17.261	15.738	1.523	15.4	8.9

Results of a correlation analysis between selected demographic variables and contextual indicators in Greek municipalities were presented in Table 3. The percent share of foreign residents in total population increased with population growth (2001–2011), percent share of singles in total population, participation rate to the job market, and decreased with the number of residents per dwelling, mean population age, and unemployment rate. The percent share of Europeans in total foreign population decreased with the number of residents per dwelling, family size, unemployment rate, and percent share of workers in industry in total workforce. Conversely, the percent share of non-Europeans in total foreign population increased with population density, percentage of singles, participation rate, and percentage of population with tertiary education, in turn decreasing with mean age and structural dependence of population, and with unemployment rate.

Results of a multiple regression model (Table 4) indicate that the highest concentration of Europeans in Greece was observed in municipalities characterized by high participation rate and population growth, industrial specialization, low proportion of population with tertiary education, and a low number of residents per dwelling. These findings indicate the preference of Europeans to settle, at least in more recent times, in accessible and economically dynamic rural locations (characterized by high rate of participation to the job market—mainly tourism activities—and low percentage of population with tertiary education).

Discussion

Since residential mobility at older ages is higher among healthy retirees, than among those still partially employed, or with disability and health concerns (Walters 2002; Sergeant and Ekerdt 2008; Riley et al. 2016), demographic trends, territorial contexts, individual-level variables, and life course events have a strong impact on the possibility of moving in later life (Kashnitsky et al. 2017) and should be investigated further. Our work contributes to this research field linking residential mobility at older age with

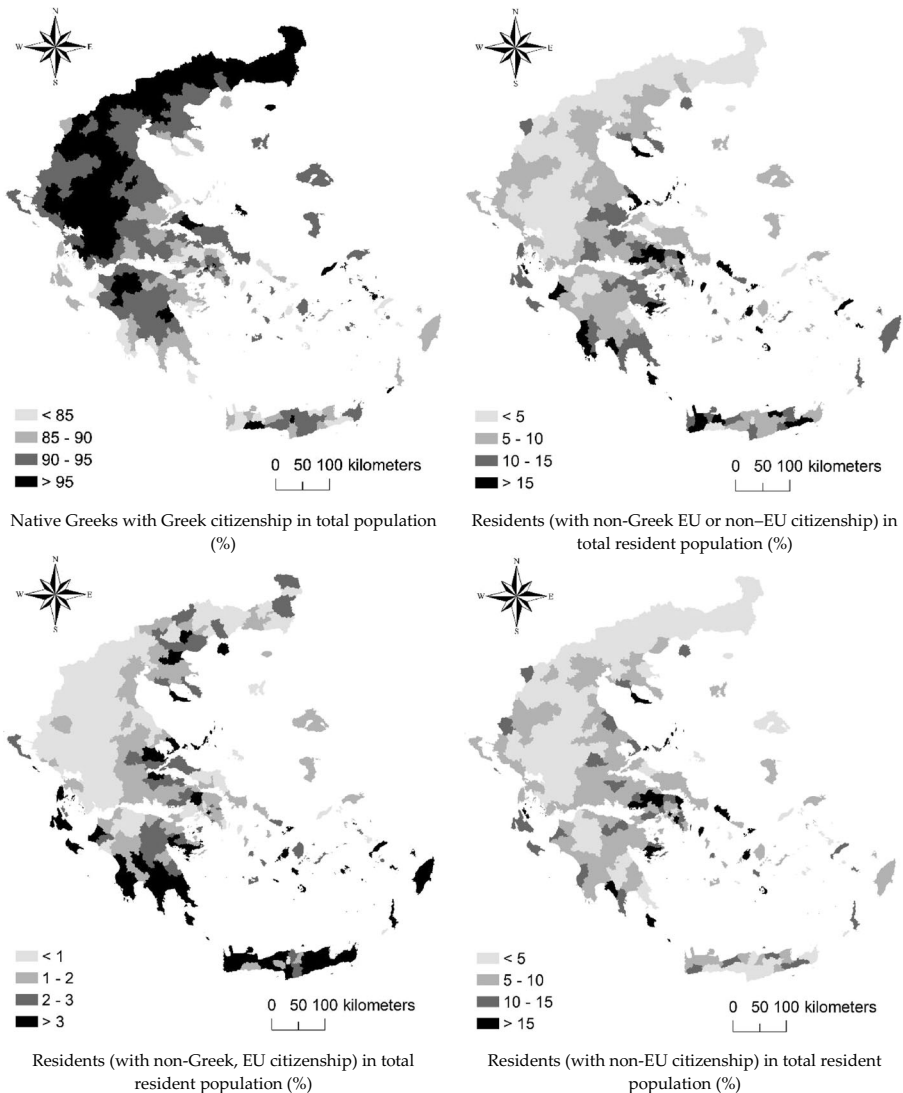


Fig. 2 Spatial distribution of selected indicators of native Greek population, non-native residents with (non-Greek) EU citizenship and people with non-EU citizenship in Greece

economic cycles, giving a broader perspective on migration dynamics (considering together citizenship and age) and settlement preferences during both expansion and recession.

While migrants' location preferences may change over time, we assume that local context is a powerful attraction factor, whose strength may vary according to the economic phase, evidencing the joint role of space and economic cycle in shaping migration flows. In this perspective, our work documents a drastic reduction in the number of European citizens residing in Greece (Hardill et al. 2005; Hall and Hardill 2016; Morote et al. 2017), as an indirect consequence of crisis in job and housing markets (Salvati 2016), limiting attractiveness of Greece for economic migrants, and

Table 3 Non parametric correlation analysis (Spearman rank correlation coefficients) between selected demographic variables and contextual indicators at the municipal scale in Greece (significance was tested at $p < 0.05$ after Bonferroni's correction for multiple comparisons and indicated with italic values in the table)

Variable	Foreigners in total population, %	Europeans ^a in total foreign population, %	Non-Europeans in total foreign population, %
Population growth, 2001–2011	0.16	0.02	0.14
Population density	0.09	− 0.12	<i>0.15</i>
Residents per dwelling	− 0.36	− 0.15	− <i>0.27</i>
Mean population age	− 0.15	0.07	− 0.19
Dependency ratio	− 0.12	0.09	− 0.17
Per cent share of singles	<i>0.17</i>	− 0.09	<i>0.21</i>
Family size	− 0.12	− 0.24	− 0.05
Participation rate	<i>0.43</i>	0.10	<i>0.40</i>
Third level education	0.10	− 0.14	<i>0.17</i>
Unemployment rate	− 0.39	− 0.37	− 0.25
Workers in industry	0.01	− 0.37	0.13
Workers in services	0.07	− 0.04	0.11

^a Non-native residents with a non-Greek, EU citizenship

altering the composition of incoming residents toward older ages. The number of (non-Greek) European citizens varied largely over the study period, increasing with economic expansion and decreasing with recession.

In both phases, the spatial distribution of Europeans in Greece was particularly mixed and fragmented. Growing urban poles (mainly the Athens' metropolitan region) attracted European and non-European migrants during economic expansion. Amenity-driven migration at older ages primarily involved highly accessible coastal regions in the last years of economic expansion, and in the subsequent recession. In this context, while the Athens' region has lost European residents since the late 2000s, the coastal regions of Crete and Peloponnese as well as the Ionian and Aegean Islands have seen a growth of incoming residents with (non-Greek) European citizenships during both expansion (1998–2007) and crisis (2008–2017). In

Table 4 Forward step-wise multiple regression between per cent share of Europeans in total population (dependent variable) and background indicators (predictors) in 316 Greek municipalities (2011)

Predictor	<i>b</i>	Std.Err.	<i>t</i> ₍₃₁₀₎	<i>p</i>
Adjusted $R^2 = 0.27$; $F_{(5,310)} = 24.5$; $p < 0.0001$				
Third level education	− 0.376	0.063	− 5.943	0.000
Participation rate	0.438	0.062	7.054	0.000
Residents per dwelling	− 0.276	0.050	− 5.517	0.000
Workers in industry	− 0.229	0.051	− 4.539	0.000
Population growth, 2001–2011	0.135	0.054	2.506	0.013

contrast, marginal inland regions have experienced limited social permeability to migrants, being associated with restricted employment opportunities and territorial constraints (e.g., accessibility) for older migrants (Di Felicianantonio and Salvati 2015).

Results of our analysis shows how coastal districts were the most attractive for incoming European residents, representing more than 5% of the total resident population in some Greek municipalities (Salvati 2018). The spatial distribution of European residents diverges from that of non-European residents, the latter being more concentrated in areas with a dynamic job market and greater economic opportunities (e.g., the industrial area around Athens, Viotia, and Korinthias). Results of the correlation analysis and the multiple regression model specifically highlight the role of local job markets and urban density in creating appropriate conditions for attracting economic migrants, with district specialization (industry vs services) that differentiates migratory flows from Europe and the rest of the world.

With economic crisis, the last period of investigation has represented a break from the long-term dynamics up to 2008. The reduction of the absolute number of incoming European residents, in the face of a consolidation of migratory flows (especially in the last two years), went hand in hand with a significant increase in the older Europeans (60 years and above) residing in Greece. These data confirm the importance of amenity-driven migration at older ages, in line with the findings of earlier studies carried out in Spain, Portugal, and Italy (e.g., Gustafson 2001; Rodriguez 2001; Cuadrado-Ciuraneta et al. 2017).

Results presented here outline that migration plays a key role in population growth in Greece, leading to a more balanced age structure in local communities exposed to aging (Zambon et al. 2017). Distinctive settlement patterns were observed for non-European economic migrants (concentrating in economically dynamic, peri-urban industrial areas) and for amenity-driven European migrants (settling preferentially in accessible coastal districts). In this context, the economic crisis has hit mainly the urban economies, drastically reducing the Athens' attractiveness (Colantoni et al. 2016). The Greek capital and the surrounding area have experienced a temporary shock in the local job market (with a reduction in participation rate and high rates of unemployment) in the period 2008–2017 (Pili et al. 2017). On the contrary, the great recession seems to have less drastically influenced tourism-specialized districts, which have achieved a continuous population growth and a modest reduction of the regional value added compared to the rest of Greece (Salvati 2016). The contribution of incoming European residents to population dynamics in coastal districts has been particularly significant, and will probably increase in the coming future (Salvati and Serra 2016; Zambon et al. 2019; Cuadrado-Ciuraneta et al. 2017).

Interpreting life cycles according to individual needs, e.g., housing place and dwell-type (Kim et al. 2005), is a pivotal contribution to a better understanding of patterns and processes of residential mobility (Marois et al. 2018). Migration at older ages basically focused on wealthy North Europeans moving to the South (Williams et al. 1997; King et al. 2000; Parreño-Castellano and Domínguez-Mujica 2016). Despite the increasing opportunities for free movements across Europe, considerable inequalities, within and among the origin and destination countries, keep on unrestricted (Rontos et al. 2016). Unequal working (and retirement) conditions and chances for future mobility persist within a dividing context of privatization and shrinking public provision across Europe in addition to economic crisis and austerity measures, mainly in Southern Europe (Casado-Díaz et al. 2004; Gavanis and Calzada 2016; Morote et al. 2017).

Urban-rural differences in location patterns were poorly analyzed within international migration after retirement, despite their importance for both demographic change and policy decisions (e.g., Rodríguez et al. 1998; Repetti et al. 2008; Munafò et al. 2013; Carlucci et al. 2017). Considering migrants with the same citizenship, a preference for downtown locations was occasionally documented for young age groups, whereas older adults settle more frequently in suburban (or rural) locations (Sabater et al. 2017). Being associated to demographic changes leading to significant replacements of social and health costs, understanding changes over time in settlement patterns of retirement migration—as we did in this work—is thus a relevant contribution to regional planning and may inform more effective policies improving services and infrastructures for old-age care (Hall and Hardill 2016). Social policy in destination countries should recognize aging care needs, which may be different to local inhabitants owing to, e.g., lack of family, care resources, language, and cultural barriers.

Conclusion

A renewed analysis of regional demographic processes, and its quantification using statistical data from population registers, allowed a comprehensive, spatially explicit assessment of migration at older ages from European countries to Greece, in comparison with international migration from non-EU countries. As documented in this study, spatial polarization in coastal-accessible and internal-marginal districts makes the analysis of settlement patterns of international migrants in Greece a particularly intriguing research issue. Going beyond the traditional urban-rural divide, the latent shift toward distinctive location models adopted by different migrant groups is evident in the study area, being similar to what has been observed in other Southern European countries, such as Italy and Spain (Solé and Parella 2003; Bayona-i-Carrasco and Gil-Alonso 2013; Strozza et al. 2016; Benassi and Naccarato 2018).

Investigation of such patterns contributes to inform regional planning, in light of a better provision of structures and services for elder foreign population. Integration of statistical data deriving from different sources (population censuses, labor force surveys, administrative registers) is a particularly appropriate strategy when analyzing complex demographic dynamics, such as international migration at older ages. The empirical results of our study also suggest the importance of high-quality statistical data and the need of sufficiently long time series of demographic indicators for a refined assessment of international migration patterns. A more comprehensive analysis of the socioeconomic profile of migrants, considering both individual (micro) data and (macro) variables at the local scale, seems to be particularly appropriate to re-design socioeconomic and fiscal policies finely tuned with recent migration trends.

Faced with a reduction of international migration and persistence of stagnant economic dynamics—European migrants, and especially those at older ages, will increasingly influence demographic dynamics in Greece, and likely in other Mediterranean countries. Although they represent a significant economic opportunity for job and housing markets, the integration of European migrants at older ages remains a major challenge for local communities in a country, such as Greece, which is still largely unprepared to accommodate substantial migratory flows from abroad. Research on local experiences from Greece and other countries—even if partial and with solutions not coordinated at central level—may advance planning of a new wave of amenity-driven, residential mobility toward Southern Europe.

Compliance with Ethical Standards

Conflict of Interest The authors declare that they have no conflict of interest.

Ethics Approval and Consent to participate This research does not involve either human participants or animals.

References

- Bayona-i-Carrasco, J., & Gil-Alonso, F. (2013). Is foreign immigration the solution to rural depopulation? The case of Catalonia (1996–2009). *Sociologia Ruralis*, 53(1), 26–51.
- Benassi, F., & Naccarato, A. (2018). Foreign citizens working in Italy: does space matter? *Spatial Demography*, 6(1), 1–16.
- Bolzman, C., Kaeser, L., & Christe, E. (2017). Transnational mobilities as a way of life among older migrants from southern Europe. *Population, Space and Place*, 23(5), e2016.
- Burholt, V. (2004). Transnationalism, economic transfers and families' ties: intercontinental contacts of older Gujaratis, Punjabis and Sylhetis in Birmingham with families abroad. *Ethnic and Racial Studies*, 27(5), 800–829.
- Campos, R. A. (2018). Retirement migration in Spain: Two cases studies in Catalanian and Mallorca. *MOJ Gerontology and Geriatrics*, 3(1), 00072.
- Carlucci, M., Grigoriadis, E., Rontos, K., & Salvati, L. (2017). Revisiting a hegemonic concept: Long-term 'Mediterranean urbanization' in between city re-polarization and metropolitan decline. *Applied Spatial Analysis and Policy*, 10(3), 347–362.
- Casado-Díaz, M., Kaiser, C., & Warnes, A. (2004). Northern European retired residents in nine southern European areas: characteristics motivations and adjustment. *Ageing and Society*, 24(3), 353–381.
- Colantoni, A., Grigoriadis, E., Sateriano, A., Venanzoni, G., & Salvati, L. (2016). Cities as selective land predators? A lesson on urban growth, deregulated planning and sprawl containment. *Science of the Total Environment*, 545, 329–339.
- Coldron, K., & Ackers, L. (2007). (Ab)using European citizenship? EU retired migrants and the exercise of healthcare rights. *Maastricht Journal of European and Comparative Law*, 14(3), 287–302.
- Cuadrado-Ciuraneta, S., Durà-Guimerà, A., & Salvati, L. (2017). Not only tourism: Unravelling suburbanization, second-home expansion and "rural" sprawl in Catalonia, Spain. *Urban Geography*, 38(1), 66–89.
- Di Felicianantonio, C., & Salvati, L. (2015). 'Southern' alternatives of urban diffusion: Investigating settlement characteristics and socioeconomic patterns in three Mediterranean regions. *Tijdschrift voor Economische en Sociale Geografie*, 106(4), 453–470.
- Duvernoy, I., Zambon, I., Sateriano, A., & Salvati, L. (2018). Pictures from the other side of the fringe: Urban growth and peri-urban agriculture in a post-industrial city (Toulouse, France). *Journal of Rural Studies*, 57, 25–35.
- Gavanas, A., & Calzada, I. (2016). Multiplex migration and aspects of precarization: Swedish retirement migrants to Spain and their service providers. *Critical Sociology*, 42(7–8), 1003–1016.
- Gehring, A. (2018). Mobile pensioners: Retirement migrants' perspectives of EU citizenship and free movement. *Innovation: The European Journal of Social Science Research*. <https://doi.org/10.1080/13511610.2018.1525285>.
- Giner-Monfort, J., Hall, K., & Betty, C. (2016). Back to Brit: retired British migrants returning from Spain. *Journal of Ethnic and Migration Studies*, 42(5), 797–815.
- Gkartziou, M. (2013). 'Leaving Athens': Narratives of counterurbanisation in times of crisis. *Journal of Rural Studies*, 32, 158–167.
- Gustafson, P. (2001). Retirement migration and transnational lifestyles. *Ageing and Society*, 21(4), 371–394.
- Gustafson, P. (2002). Tourism and seasonal retirement migration. *Annals of Tourism Research*, 29(4), 899–918.
- Gustafson, P. (2008). Transnationalism in retirement migration: The case of north European retirees in Spain. *Ethnic and Racial Studies*, 31(3), 451–475.
- Gustafson, P. (2009). Your home in Spain: Residential strategies in international retirement migration. In M. Benson & K. O'Reilly (Eds.), *Lifestyle migrations: expectations, aspirations and experiences*. Aldershot: Ashgate.

- Hall, K., & Hardill, I. (2016). Retirement migration, the 'other' story: caring for frail elderly British citizens in Spain. *Ageing and Society*, 36(3), 562–585.
- Hall, C. M., & Müller, D. K. (2018). *The Routledge handbook of second home tourism and Mobilities*. London: Routledge.
- Hannonen, O. (2018). Second home owners as tourism trend-setters: a case of residential tourists in gran Canaria. *Journal of Spatial and Organizational Dynamics*, 6(4), 345–359.
- Hardill, I., Spradbery, A., Arnold-Boakes, J., & Marrugat, M. L. (2005). Severe health and social care issues among British migrants where tire to Spain. *Ageing and Society*, 25(5), 769–783.
- Kashnitsky, I., de Beer, J., & van Wissen, L. (2017). Decomposition of regional convergence in population aging across Europe. *Genus*, 73(1), 2.
- Kasimis, C. (2008). Survival and expansion: migrants in Greek rural regions. *Population, Space and Place*, 14(6), 511–524.
- Kim, T.-K., Horner, M. W., & Marans, R. W. (2005). Life cycle and environmental factors in selecting residential and job locations. *Housing Studies*, 20(3), 457–473.
- King, R., & Vullnetari, J. (2006). Orphan pensioners and migrating grandparents: The impact of mass migration on older people in rural Albania. *Ageing and Society*, 26(5), 783–816.
- King, R., Warnes, A. M., & Williams, A. M. (1998). International retirement migration in Europe. *International Journal of Population Geography*, 4(2), 91–111.
- King, R., Warnes, T., & Allan, W. (2000). *Sunset lives: British retirement migration to the Mediterranean*. Oxford: Berg.
- Kotzamanis, B. (1997). Athens 1848-1995. The demographic emergence of a metropolis. *The Greek Review of Social Research*, 92-93, 3–30.
- Longino Jr., C. F., Perzynski, A. T., & Stoller, E. P. (2002). Pandora's briefcase: Unpacking the retirement migration decision. *Research on Aging*, 24(1), 29–49.
- Maloutas, T. (2007). Segregation, social polarization and immigration in Athens during the 1990s: theoretical expectations and contextual difference. *International Journal of Urban and Regional Research*, 31(4), 733–758.
- Marois, G., Lord, S., & Negron-Poblete, P. (2018). The residential mobility of seniors among different residential forms: analysis of metropolitan and rural issues for six contrasted regions in Québec, Canada. *Journal of Housing for the Elderly*, 32(1), 73–98.
- Morelli, V. G., Rontos, K., & Salvati, L. (2014). Between suburbanisation and re-urbanisation: revisiting the urban life cycle in a Mediterranean compact city. *Urban Research & Practice*, 7(1), 74–88.
- Morote, Á. F., Saurí, D., & Hernández, M. (2017). Residential tourism, swimming pools, and water demand in the Western Mediterranean. *The Professional Geographer*, 69(1), 1–11.
- Munafò, M., Salvati, L., & Zitti, M. (2013). Estimating soil sealing rate at national level—Italy as a case study. *Ecological Indicators*, 26, 137–140.
- Muñoz, R. D. (2018). International retirees at the polls: Spanish local elections 2015. *RIPS: Revista de Investigaciones Políticas y Sociológicas*, 17(1), 27–54.
- Oliver, C. (2017). Peer-led care practices and “community” formation in British retirement migration. *Nordic Journal of Migration Research*, 7(3), 172–180.
- Parreño-Castellano, J., & Dominguez-Mujica, J. (2016). Working and retiring in sunny Spain: lifestyle migration further explored. *Hungarian Geographical Bulletin*, 65(4), 407–420.
- Pili, S., Grigoriadis, E., Carlucci, M., Clemente, M., & Salvati, L. (2017). Towards sustainable growth? A multi-criteria assessment of (changing) urban forms. *Ecological Indicators*, 76, 71–80.
- Repetti, M., Phillison, C., & Calasanti, T. (2008). Retirement migration in Europe: a choice for a better life? *Sociological Research Online*. <https://doi.org/10.1177/1360780418782243>.
- Riley, A., Hawkey, L. C., & Cagney, K. A. (2016). Racial differences in the effects of neighborhood disadvantage on residential mobility in later life. *The Journals of Gerontology: Series B, Psychological Sciences and Social Sciences*, 71(6), 1131–1140.
- Rodríguez, V. (2001). Tourism as a recruiting post for retirement migration. *Tourism Geographies*, 3(1), 52–63.
- Rodríguez, V., Fernández-Mayoralas, G., & Rojo, F. (1998). European retirees on the Costa del Sol: a cross-national comparison. *International Journal of Population Geography*, 4, 183–200.
- Rodríguez, V., Fernández-Mayoralas, G., & Rojo, F. (2004). International retirement migration: retired Europeans living on the Costa del Sol, Spain. *Population Review*, 43(1), 1–36.
- Rontos, K., Grigoriadis, E., Sateriano, A., Syrmali, M., Vavouras, I., & Salvati, L. (2016). Lost in protest, found in segregation: divided cities in the light of the 2015 “Oxi” referendum in Greece. *City, Culture and Society*, 7(3), 139–148.

- Sabater, A., Graham, E., & Finney, N. (2017). The spatialities of ageing: Evidencing increasing spatial polarisation between older and younger adults in England and Wales. *Demographic Research*, 36, 731–744.
- Salvati, L. (2016). The dark side of the crisis: disparities in per capita income (2000–12) and the urban-rural gradient in Greece. *Tijdschrift voor Economische en Sociale Geografie*, 107(5), 628–641.
- Salvati, L. (2018). Population growth and the economic crisis: Understanding latent patterns of change in Greece, 2002–2016. *Letters in Spatial and Resource Sciences*, 11(2), 105–126.
- Salvati, L., & Serra, P. (2016). Estimating rapidity of change in complex urban systems: a multidimensional, local-scale approach. *Geographical Analysis*, 48(2), 132–156.
- Sayas, J. P. (2006). Urban sprawl in the periurban coastal zones of Athens. *The Greek Review of Social Research*, 120(B), 71–104.
- Sergeant, J. F., & Ekerdt, D. J. (2008). Motives for residential mobility in later life: post-move perspectives of elders and family members. *The International Journal of Aging and Human Development*, 66, 131–154.
- Solé, C., & Parella, S. N. (2003). The labour market and racial discrimination in Spain. *Journal of Ethnic and Migration Studies*, 29(1), 121–140.
- Stergiou, D. P., Papatheodorou, A., & Tsartas, P. (2017). Second home conversion during the economic crisis: the case of Artemida, Greece. *Social and Cultural Geography*, 18(8), 1129–1151.
- Strozza, S., Benassi, F., Ferrara, R., & Gallo, G. (2016). Recent demographic trends in the major Italian urban agglomerations: the role of foreigners. *Spatial Demography*, 4(1), 39–70.
- Truly, D. (2002). International retirement migration and tourism along the Lake Chapala Riviera: developing a matrix of retirement migration behaviour. *Tourism Geographies*, 4(3), 261–281.
- Walters, W. H. (2002). Later-life migration in the United States: A review of recent research. *Journal of Planning Literature*, 17, 37–66.
- Warnes, A. M., & Williams, A. (2006). Older migrants in Europe: a new focus for migration studies. *Journal of Ethnic and Migration Studies*, 32, 1257–1281.
- White, P. (2006). Migrant populations approaching old age: Prospects in Europe. *Journal of Ethnic and Migration Studies*, 32(8), 1283–1300.
- Williams, A., King, R., & Warnes, T. (1997). A place in the sun: International retirement migration from northern to southern Europe. *European Urban and Regional Studies*, 4(2), 115–134.
- Williams, A. M., King, R., Warnes, A., & Patterson, G. (2000). Tourism and international retirement migration: new forms of an old relationship in southern Europe. *Tourism Geographies*, 2(1), 28–49.
- Zambon, I., Serra, P., Sauri, D., Carlucci, M., & Salvati, L. (2017). Beyond the ‘Mediterranean city’: socioeconomic disparities and urban sprawl in three southern European cities. *Geografiska Annaler: Series B, Human Geography*, 99(3), 319–337.
- Zambon, I., Colantoni, A., & Salvati, L. (2019). Horizontal vs vertical growth: Understanding latent patterns of urban expansion in large metropolitan regions. *Science of the Total Environment*, 654, 778–785.
- Zitti, M., Ferrara, C., Perini, L., Carlucci, M., & Salvati, L. (2015). Long-term urban growth and land use efficiency in southern Europe: Implications for sustainable land management. *Sustainability*, 7(3), 3359–3385.
- Zontini, E. (2015). Growing old in a transnational social field: belonging, mobility and identity among Italian migrants. *Ethnic and Racial Studies*, 38(2), 326–341.

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