



# Rural revival? The rise in internal migration to rural areas during the COVID-19 pandemic. Who moved and Where?

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## ABSTRACT

During the outbreak of the COVID-19 pandemic, anecdotal evidence of a “rural revival” emerged mirroring the “urban exodus” hypothesis. Currently, we know that internal migration to rural areas increased in some countries during 2020, although not with the intensity speculated by the media. However, little is known about the attributes of rural areas attracting migrants, demographic composition of migration inflows, and if counter-urbanisation movements persisted over 2021. Drawing on administrative population register data, we analysed the main types of rural areas pulling internal migrants in Spain and their demographic characteristics, namely age, sex and place of birth during 2020 and 2020, using the period 2016–2019 as a benchmark. Our results show that in-migration increased in rural areas close to cities and with high prevalence of second homes during 2020, while out-migration declined. Exceptionally high inflows persisted over 2021, but outflows converged to figures observed prior to the pandemic. Inflows to rural areas comprised internal migrants across a wide age spectrum, from young adults and families to retired individuals. These flows also comprised foreign-born, particularly populations of a wide age range from Latin American countries.

## 1. Introduction

Since the start of COVID-19 pandemic in December 2019, more than 6.6 million deaths worldwide and 633 million confirmed cases have been recorded as of mid-November 2022 (World Health Organization, 2022). Spain has been one of the most impacted nations in the developed world reporting the highest excess deaths during the first wave of the pandemic (Eurostat, 2022). COVID-19 has also considerably impacted spatial mobility patterns. Daily mobility decreased as a result of stringency measures, such as mobility restrictions and business closures, particularly during lockdowns (Duque et al., 2021). International migration also reported a decline in response to border closures and travel restrictions (Guadagno, 2020; IOM, 2020; González-Leonardo and Rowe, 2022).

Early reports on the media speculated significant changes in the internal migration system. Reports about a “rural revival” emerged as a result of an “exodus” from large cities (Marsh, 2020; Oliveres and Sánchez, 2021). Recent empirical evidence has confirmed an increase in

internal migration from dense cities to rural areas in Spain (González-Leonardo et al., 2022b), Japan (Fielding and Ishikawa, 2021), United Kingdom (Rowe et al., 2022), Sweden (Vogiazides and Kawalerowicz, 2022) and Australia (Borsellino et al., 2022) during 2020, and a decline on net migration rates in the largest German cities (Stawarz et al., 2022). However, these changes were less pronounced than anticipated and did not alter existing macro-level pattern of internal migration across the urban hierarchy, as the majority of movements continued to occur in cities and suburbs. Yet, existing evidence suggests that increasing counterurbanisation movements had a relatively significant impact on the population size and structure of sparsely populated rural areas, while the population size in cities was less affected by the increase in outflows.

Currently, we know of an increase in internal in-migration to rural areas in 2020, but it is still unknown if this trend persisted over 2021. In addition, there is little evidence on the characteristics of rural destinations and demographic composition of inflows. Identifying and understanding the main rural migrant destinations is key to assess the extent

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of population deconcentration during COVID-19 and potential future trends; that is, whether a process of counterurbanisation or “rural suburbanization” underpin migration movements from cities. Speculations have suggested that migrations from large cities have been headed to areas adjacent to large cities representing more a process of “rural suburbanization”, rather than real population deconcentration (López-Gay, 2021). Additionally, anecdotal evidence indicates that young professional and wealthy families have fled cities during the COVID-19 pandemic (Nef, 2020; Galán, 2021). Yet, little is known about the destinations of these moves, although changes in migration movements may have important demographic and social implications. Critical mass of young professional and wealthy individuals may impact the local composition of rural areas, slowing down ageing, raising local fertility levels and creating local demand for services.

To address these gaps, we aim to identify and understand key attributes of rural migrant destination areas and compositional profile of migration flows during 2020 and 2021 in Spain, compared to the period 2016–2019. Specifically, we seek to address the following questions: (1) What types of rural areas experienced the largest population gains through internal migration? (2) Who moved to rural areas; Were migration flows to rural areas selective by age, sex and place of birth? Have these changes persisted during 2021? We use register data from the *Estadística de Variaciones Residenciales (EVR)* of the *Instituto Nacional de Estadística (INE)* to capture internal migration. The rest of the article is structured as follows: The next section reviews the existing evidence on internal migration during the COVID-19 pandemic and offers a brief overview of the existing predominant internal migration patterns in Spain prior to the pandemic; section 3 describes the data and method used in the analysis before the results, which are discussed in Section 4; finally, section 5 discusses the key findings and their research and policy implications.

## 2. Background

### 2.1. What do we know about internal migration during the pandemic?

Since the outbreak of the pandemic, the hypothesis of a “rural revival” has been a trending topic in the media. Headlines claimed that an “urban exodus” from large cities was set in motion during the early stages of the pandemic (Oliveres and Sánchez, 2021), involving predominantly young people and families moving to rural municipalities (Nef, 2020; Galán, 2021). Such headlines also emerged in France, Sweden, the United Kingdom and the United States. In the United Kingdom and France, increases of home purchases in rural areas have been documented (Marsh, 2020; Sagnard, 2021). In the United States, an increase in emails from cities forwarded to non-metropolitan areas are argue to reflect a rise in movements from large cities (Whitaker, 2021).

A set of distinctive factors have underpinned the “rural revival” narrative. At the onset of the pandemic, little was known about the virus, and rural areas were seen as spaces of refuge from the high incidence of the pandemic in cities (Florida et al., 2021). Areas characterised by low population density, isolation and open spaces were considered as ideal places to escape the spread of COVID-19 in high density urban environments (Pomeroy and Chainey, 2020). Additionally, home confinements triggered a need for more spacious homes and availability of gardens and yards, particularly among families (Hughes, 2020; Marsh, 2020). In addition, teleworking and closures of schools, colleges and universities reduced the need to live close to work or study centres (King, 2020; Smith et al., 2021). Stringency measures, closures of retail stores and activities decreased offers for leisure and consumption in cities, reducing their magnetic forces (Matheson et al., 2020).

Balancing the loss of attractiveness in large cities, some centripetal forces have endured the pandemic. Not all jobs can be done remotely (Florida et al., 2021) and rural areas tend to suffer from poor internet connection and infrastructure (Chen and Wellman, 2004). Additionally, most companies seem to have returned to in-person office work or have

implemented hybrid forms of work follow relaxation of home confinement restrictions (Haag, 2021). Schools and universities have also returned to face-to-face teaching. Therefore, living close to work or study places remain relevant. Leisure and consumption activities in cities have gradually returned to normal, reinvigorating urban life. At the same time, rural areas offer limited diversity and availability of job opportunities and they may also lack of suitable schooling, health and transport infrastructure (Pinilla and Sáez, 2021).

Emerging academic evidence has shown that internal migration from large Spanish cities to rural areas increased during 2020. However, these variations do not seem to have altered the macro-level patterns of internal migration. To date, an increase in internal migration from urban centres to areas with lower population densities has been documented in five countries: Spain (González-Leonardo et al., 2022b). Japan (Fielding and Ishikawa, 2021), Great Britain (Rowe et al., 2022), Sweden (Vogiazides and Kawalerowicz, 2022) and Australia (Borsellino et al., 2022). In Sweden, the largest increase in migration flows from the city of Stockholm occurred in adjacent less densely populated areas and in certain holiday town with second homes. In Germany, net migration rates in the largest cities declined, and migration flows from urban areas included a significant proportion of middle-aged people and families (Stawarz et al., 2022).

These findings suggest that proximity to urban centres, availability of second homes, and wealthy families have underpinned internal migration movements to less populated areas during the pandemic. Similarly, life-course also appears to have played an important role in counterurbanization movements. This evidence could suggest that foreign-born populations were less involved in movements to rural areas, as they are usually employed in face-to-face low-paid jobs. Yet, existing research has focused on out-migration flows from large cities. Less attention has been paid to the rural areas attracting these flows. Identifying and understanding the key migrant destinations in rural areas is key to determine and coordinate appropriate policy interventions to supply suitable services and infrastructure. We seek to determine the attributes of the key rural destinations of migration flows and the age, gender and country-of-birth composition of migration flows.

### 2.2. Internal migration in Spain preceding the pandemic

Spain displays low levels of internal migration, as other Southern and Eastern European countries (Bell et al., 2015; Bernard and Vidal, 2020). According to EVR data, only 3.3% of the Spanish population changed their place of residence to another municipality each year between 2016 and 2020, a low proportion compared to levels observed in Nordic countries or Western Europe. For example, the overall migration rate in Iceland and France was around 18% (Rees et al., 2017). Low levels of mobility in Spain are coupled with low levels of population redistribution across the country (Rowe et al., 2019, 2020). Combined low levels of intensity and impact have resulted in a migration system characterized by a pattern of spatial equilibrium, where inflows and outflows are closely balanced (Rowe et al., 2019; Rowe and Patias, 2020).

Young adults tend to dominate the composition of migration flows (Cámara, 2009; González-Leonardo et al., 2020, 2022a). In terms of gender, internal migration flows tend to be relatively balanced, although women have a higher propensity to migrate from rural areas to cities than men (Camarero and Sampedro, 2019; Collantes and Pinilla, 2019). Concerning the place of birth, the foreign-born population tend to have higher internal mobility rates than the native-born (López-Gay, 2008; Gil-Alonso et al., 2015; Recaño, 2016), as they are more likely to perform both one and multiple movements, which is partly explained by the spatial assimilation paradigm (Silvestre and Reher, 2014). EVR data indicate that inter-municipal migration of the foreign-born accounted for 28.4% of the total in 2016–2020, while they represented only 15.4% of the resident population in 2020. Despite their higher internal migration rates, migration levels among the foreign-born population have remained low compared to those recorded in other countries

(Recaño, 2016).

Low levels of internal migration in Spain occur in a context of overlapping processes of urbanization, suburbanization and counterurbanisation (López-Gay 2017 and 2020, Torrado et al., 2020; Gil-Alonso et al., 2021). Yet, internal migration inflows to core cities, suburbs and rural areas tend to be balanced by counterpartflows (Rowe et al., 2019; González-Leonardo, 2021). Despite the spatial equilibrium across the urban hierarchy, territorial differences exist. Counterurbanisation movements are mainly sustained by flows towards rural areas close to cities (Recaño, 2020; Rowe and Patias, 2020). Suburbanization is underpinned by population gains through internal migration in suburbs of highly dense cities, particularly in Madrid and Barcelona (Bayona and Pujadas, 2020; Vinci et al., 2022). Population losses due to out-migration occur in rural areas of rapidly depopulated provinces in the northwest and interior of Spain (Collantes and Pinilla, 2019). In this paper, we analyse how the pandemic has altered the dominant patterns of internal migration and demographic composition of inflows and outflows in rural areas.

### 3. Data and method

#### 3.1. Data

We used EVR register data to analyse internal migration to and from rural areas during 2020 and 2021, compared to the average of the pre-pandemic period 2016–2019. The EVR contains granular register data that allows to analyse changes of residence amongst the 8130 Spanish municipalities. It contains basic demographic data of migrants, such as age, sex, and place of birth. Although it is a reliable source for studying internal migration patterns, some limitations must be considered.

First, during the first months of home confinement (mid-March and late-June 2020), most registration offices remained closed, thus some changes in residence may not have been recorded during this period, or they may have been included retroactively. However, this issue should be of little importance in quantitative terms, as most of the population remained confined in their homes and it is unlikely that they changed the place of residence. On the other hand, both before and after the lockdown, the EVR may have been affected by over-reporting due to untruthful residential registrations by people who registered their place of residencia in rural areas without the intention of living there permanently, mainly to avoid mobility restrictions in cities and move to bigger and more comfortable homes. Although the national lockdown ended in late-June 2020, regional and local governments implemented temporary mobility restrictions on non-essential activities during the last four months of 2020 and over 2021, especially in areas where the number of COVID-19 cases increased, which were mostly urban. Over-reporting due to untruthful residential registration is difficult to quantify, but it should be considered in order to interpret and make assumptions from our results.

#### 3.2. Method

Our analysis consists in three stages, which correspond to the three sections of the results. The first stage analyses the patterns of internal migration across the urban hierarchy. For this purpose, we calculated the flows of in-migration, out-migration and internal net-migration in the set of rural areas, the core cities, suburbs and towns. The core cities and suburbs correspond to the classification of the *Atlas Estadístico de las Áreas Urbanas* of the Spanish *Ministerio de Fomento, Transportes y Agenda Urbana-MITMA* (see Table 1 of the Annex). Municipalities which are not included in either of the two categories were recoded as towns or rural municipalities according to the population threshold of 10,000 inhabitants (see Collantes and Pinilla, 2019).

In the second stage, we analysed internal migration in different types of rural municipalities according to the number of inhabitants and distance to core cities, as well as the spatial patterns of changes in resi-

dence. To this end, we selected only rural municipalities and classified them according to population size (<2,000, 2,000 to 5,000 and 5,000 to 10,000 inhabitants) and proximity to core cities (< & > 40 km<sup>1</sup>), with a total of six categories (see Table 2 in the Annex). We calculated Euclidean distance using a buffer technique. We analysed in-, out- and net-migration outcomes in each individual category of rural municipalities. Next, we calculated and mapped rates of in- (IR), out- (OR) and internal net-migration (NR) at the municipal level to explore the spatial patterns of internal migration in rural areas.

$$1. IR_j = \frac{I_i}{P_i} * 1000 \quad 2. OR_i = \frac{O_i}{P_i} * 1000 \quad 3. NR_i = \frac{(I_i - O_i)}{P_i} * 1000$$

where  $O_i$  is the number of internal out-migrants leaving the municipality  $i$ ,  $I_i$  is the number of internal in-migrants arriving in the municipality  $i$  and  $P_i$  is the middle population.

Finally, in the third stage, we analysed the demographic profile of internal in- and out-migrants who arrived and left rural areas, respectively, as well as the resulting composition of net-migrations. First, we explored the migration patterns by age, then by age and sex, and by age and place of birth (population born in Spain and abroad). Finally, we analysed the age composition of internal in-migrants who arrived in rural areas among the foreign-born population by country of birth groups: Latin America; European Union-15 (EU-15) and high-income countries, including Norway, Sweden, Iceland, United States, Canada, Australia and Japan; other European countries; Maghreb; other African countries; Asia and the Middle East. The dominant group, in terms of population, is Latin America, including different origins, followed by the category's other European countries, mainly Romanian population, and Maghreb, mostly Moroccans. The group of people born in the EU-15 and high-income countries also has a significant number of residents and is mainly composed of citizens from the United Kingdom, France, Germany and Italy. The categories other African and Asian and Middle East countries represent a small proportion of the total population. All age patterns were smoothed using moving averages of five years of age.

### 4. Results

#### 4.1. Internal migration across the urban hierarchy: Increasing attractiveness of rural areas during the pandemic

In the 2016–2019 period, a pattern of spatial equilibrium is observed across the Spanish urban hierarchy, as the number of out-migrations was similar to that of in-migrations in rural areas, towns, suburbs and core cities (Fig. 1). In 2020, however, the arrival of the pandemic altered the status of equilibrium, resulting in population gains in rural areas and losses in core cities due to internal migration. The net-migration in rural municipalities was 88,000 inhabitants as a result of a 20.5% increase in in-migration and a 12.6% decrease in out-migration. Core cities registered a loss of 127,000 individuals due to a rise in out-migration by 15.4% and a decline in in-migration by 6.0%. In suburbs and towns, there were no substantial variation in net-migration compared to pre-pandemic values. During 2021, population gains due to internal migration persisted in rural areas (+42,000), as well as negative net-migration in core cities (−84,000), but values were closer to those observed prior to the pandemic. In rural municipalities, in-migration displayed similar levels than in 2020, while out-migration increased

<sup>1a</sup> We tried different buffers, from 20 to 50 km, and 40 km was the distance that fitted best our study context. We observed that municipalities 40 km away from cities usually correspond to areas with low population densities and high intensities of depopulation. We then used 40 km to determine radius of urban influence (e.g., commuting and decentralisation dynamics).

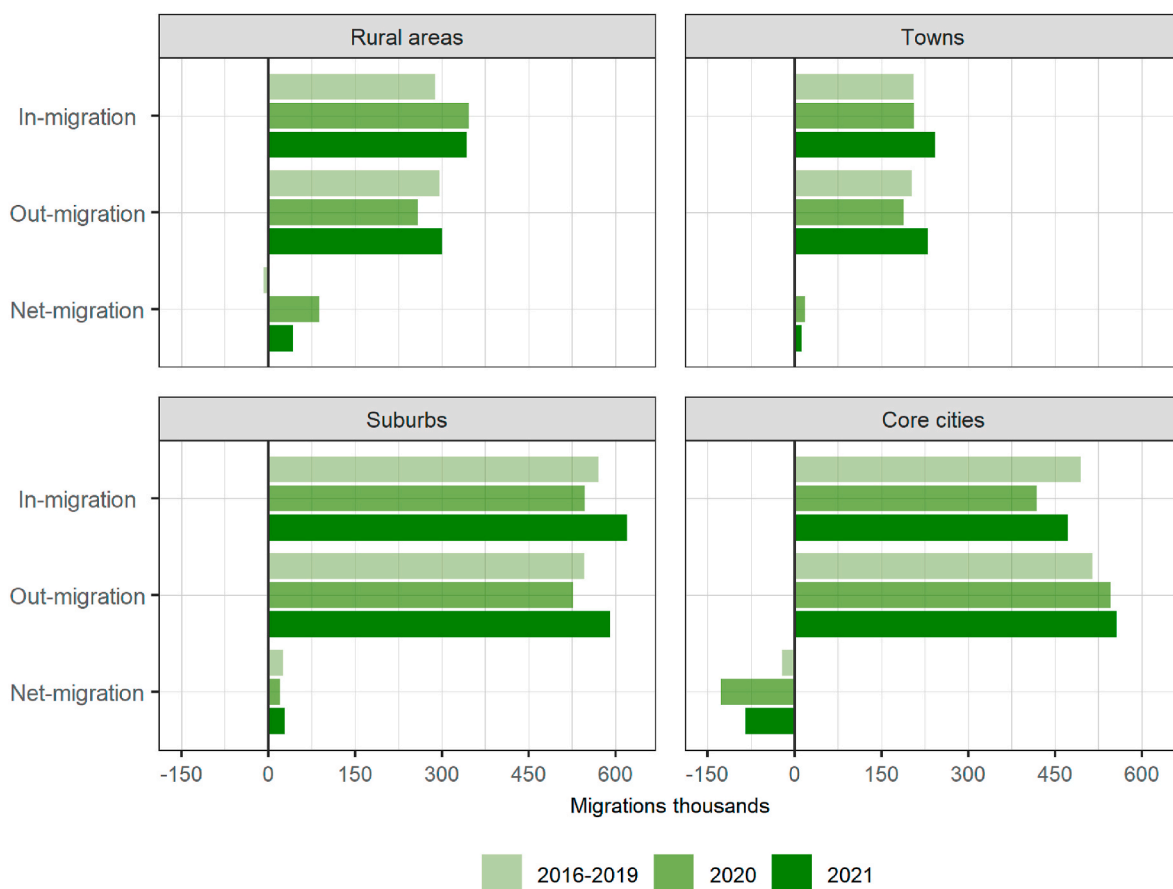


Fig. 1. Internal in-, out-and net-migrations by territorial typology: 2016–2019 (average), 2020 and 2021. Source: Own elaboration using data from the *Estadística de Variaciones Residenciales* (INE).

and recovered the same figures of the period 2016–2019. In core cities, out-migration showed similar values compared to 2020, but in-migration raised to pre-pandemic levels. Surprisingly, outflows and inflows accelerated in suburbs and towns during 2021, but net-migration-rates were not affected because both types of movements increased to the same extent.

4.2. To which rural areas did internal migrants move? Small municipalities close to cities and holiday villages as main destinations

When next analyse internal migration in rural areas by number of inhabitants and distance to core cities to determine to which type of municipalities people moved during the pandemic. (Fig. 2). Net-migration gains in 2020 were primarily observed in municipalities less than 40 km away from cities, mainly in those with less than 2,000 inhabitants. In this rural typology, the population increased by 28,000 individuals due to internal migration, while the balance was 23,000 individuals in municipalities between 2,000 and 5,000 inhabitants and 17,000 in those from 5,000 to 10,000 residents. The gains were mainly due to an increase in internal in-migration and, secondarily, to a decrease in out-migration. In rural municipalities more than 40 km away from the cities and with less than 2,000 inhabitants, net-migration also increased, but to a lesser extent. Variations in villages with more than 2,000 inhabitants and 40 Km away from core cities were of less importance in quantitative terms. In all rural areas 40 km farther from cities, both the increase in in-migration and the decrease in out-migration were equally affected during the pandemic. In 2021, net-migration declined in all rural municipalities, primarily due to an increase in out-migration. While rural areas less than 40 Km from cities still displayed significant population gain due to persistent levels of

unusual high inflows, in- and out-migration were closely balanced in villages farther away.

Regarding the spatial patterns of internal migration in rural municipalities during 2020, we observe significant variations compared to the pre-pandemic period (Fig. 3). Net migration rates during 2016–2019 reflect, again, a spatial equilibrium, with annual losses or gains lower than 5‰ in most municipalities, although we identify a more prominent negative balance in depopulated rural areas of the northwest and the interior of Spain (i.e., the provinces of Castile and León, Guadalajara and Cuenca). In 2020, however, positive rates are observed in most rural municipalities, mainly in those which are known to be holiday villages with second homes (López-Colás and Módenes, 2004; Alario et al., 2014), in the close proximity to cities and with attractive landscapes—mountain areas and natural parks—: villages in the Central System mountain close to Madrid (in the provinces of Ávila, Segovia, Guadalajara, Toledo); the north of Burgos in the vicinity of the Basque Country; the Aragonese Pyrenees (north of Huesca) and the Catalan Pyrenees (north of Girona), close to the border with France; and some sectors of the Iberian System mountain, on the edge of the Valencian Community (Teruel and the southwest of Castellón). Practically, all rural municipalities experienced a decrease in out-migration, while the increase in internal in-migration was concentrated in the holiday villages described above. In 2021, net migration rates decreased in rural municipalities, although remained positive in most of them. In-migration showed similar spatial patterns than those of 2020, while out-migration returned to pre-pandemic levels.

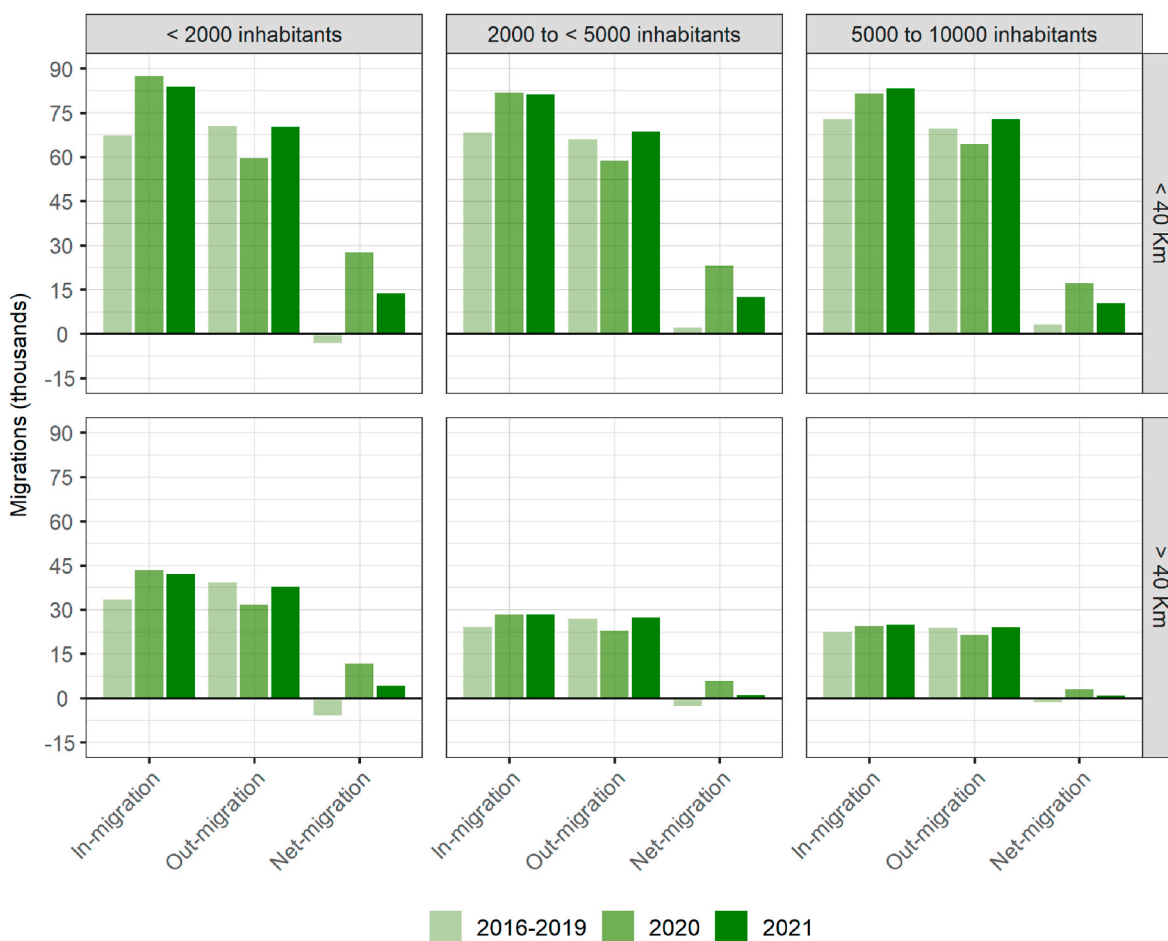


Fig. 2. Internal in-, out- and net-migrations in rural areas by population size and distance to core cities: 2016–2019 (average), 2020 and 2021. Source: Own elaboration using data from the *Estadística de Variaciones Residenciales* (INE).

4.3. Who moved to rural areas? A wide profile by age and sex, but greater diversity by place of birth

In this section, we explore the age profile of those who moved in and out of rural areas (Fig. 4). Regarding the former, variations between 2016 and 2019 and 2020 age patterns indicate that the increase in in-migration to rural areas involved a wide age spectrum, from people in their late 30s to retirees of 70 and 80-years-old, as well as childhood migration. We observe a similar pattern in 2021, despite a small decrease in the arrival of young adults and a slight increase of populations over 70-years-old. As for the decline in out migration during 2020, variations in age patterns, however, were concentrated among young adults between 25 and 40 years of age and their descendants, while there were not major differences between 2021 and 2016–2019. Observing the net migration balance, variations in inflows and outflows in 2020 reversed the loss of young people in rural areas prior to the pandemic, and generated population gains in all age groups concentrated among people between 30 and 60 years old. In 2021, net-migration only reached significant values among people over late-30s and their descendants.

Regarding patterns by age and sex, we observe that both men and women contributed to the increase in in-migration and to the decrease in out-migration during 2020, and to the subsequent deceleration in the latter in 2021. (Fig. 5). We do not find substantial variations by gender linked to the pandemic, as the sex differences observed in the 2020 and 2021 are an extension of those already recorded in the 2016–2019 period: slightly higher and earlier out-migration of women and a higher inflow among men from the age of 35 years-old. The fact that variations

occurred equally across both genders suggests that there could be a significant share of couples in counterurbanization movements.

Next, we analyse the profile of internal migrants by age between native- and foreign-born populations (Fig. 6). In the case of natives, variations reflect identical results than those of Fig. 4, since they represent 84.6% of the total population and, therefore, most movements in that figure. Regarding the patterns of internal migration among the foreign-born, we observe that they were also involved in increasing changes of residence to rural areas during 2020 and 2021. The age distribution, as among natives, is wide. Regarding the age patterns of departures, we do not observe substantial changes amongst 2016–2019, 2020 and 2021, indicating that a similar number of foreign-born with the same age profile as previous years left rural municipalities during the pandemic. The age patterns of net-migrations reveal gains of foreign-born populations by internal migration in 2020 and 2021 from ages 20 to 65, whereas inflows and outflows were balanced prior to the pandemic. As we have seen, this variation occurred exclusively due to an increase in internal in-migration of foreign-born individuals to rural areas.

Finally, we explore which groups of foreign-born populations were involved in the increase in in-migration to rural municipalities (Fig. 7). There was only a substantial increase in arrivals among the Latin Americans and, to a lesser extent, for individuals from the EU-15 and high-income countries and from Maghreb. Concerning the Latin Americans, as for the population born in Spain, the age profile is wide (25–65 years), although most in-migrants were comprised in the 25–45 age group. Regarding populations born in the EU-15 and high-income countries, the increase of inflows to rural areas was mainly between

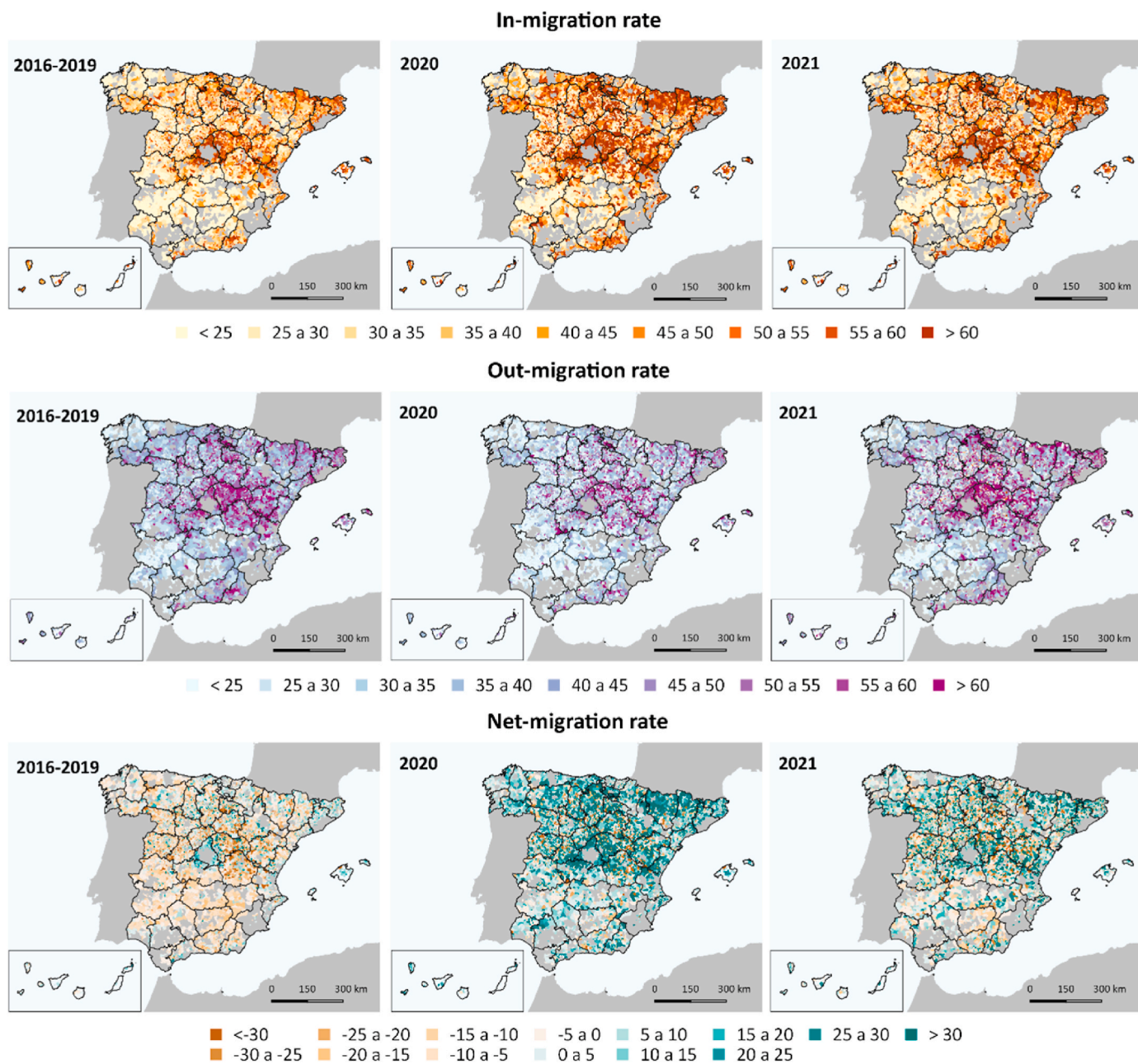


Fig. 3. Internal in-, out- and net-migration rates in rural municipalities (%): 2016–2019 (average), 2020 and 2021. Source: Own elaboration using data from the *Estadística de Variaciones Residenciales* and official population figures (INE).

45 and 60 years of age, although we also observe some variations in the age groups 25 to 45 and 60 to 65. Among people from Maghreb, the number of internal in-migrants only increased for populations younger than 30-years-old. We do not find significant differences in other groups of foreign-born populations neither in 2020 nor 2021, except a small decrease in the category other European countries and a slight increase among the North Africans.

### 5. Conclusions and discussion

During the COVID-19 pandemic in 2020, internal migration to rural areas increased by 20.5%. As a result, in-migration exceeded out-migration producing a net balance of 88 thousand individuals. Such levels of redistribution far exceeded the near zero balances pre-pandemic. While out-migration decreased in most rural municipalities, rural holiday villages near cities recorded the greatest increases in in-

migration. These increases occurred particularly in villages which are known for having a high concentration of second homes and natural landscapes, according to previous works (López-Colás and Módenes, 2004; Alario et al., 2014). Rural areas with comparatively smaller populations and close to cities seem to have been more attractive, while rural areas far away from cities received less internal migrants. In 2021, unusual high levels of in-migration to rural areas and out-migration from cities persisted, while outflows from the former and inflows for the latter converged to pre-pandemic levels. As a result, net-migrations in rural areas and cities were closer to the figures observed prior to COVID-19.

Our results are consistent with those documented in Sweden and Britain. In these countries, outflows from large densely populated cities tended to gravitate towards areas with low population density close to cities and holiday destinations (Vogiazides and Kawalerowicz, 2022; Rowe et al., 2022). People who changed their place of residence to rural

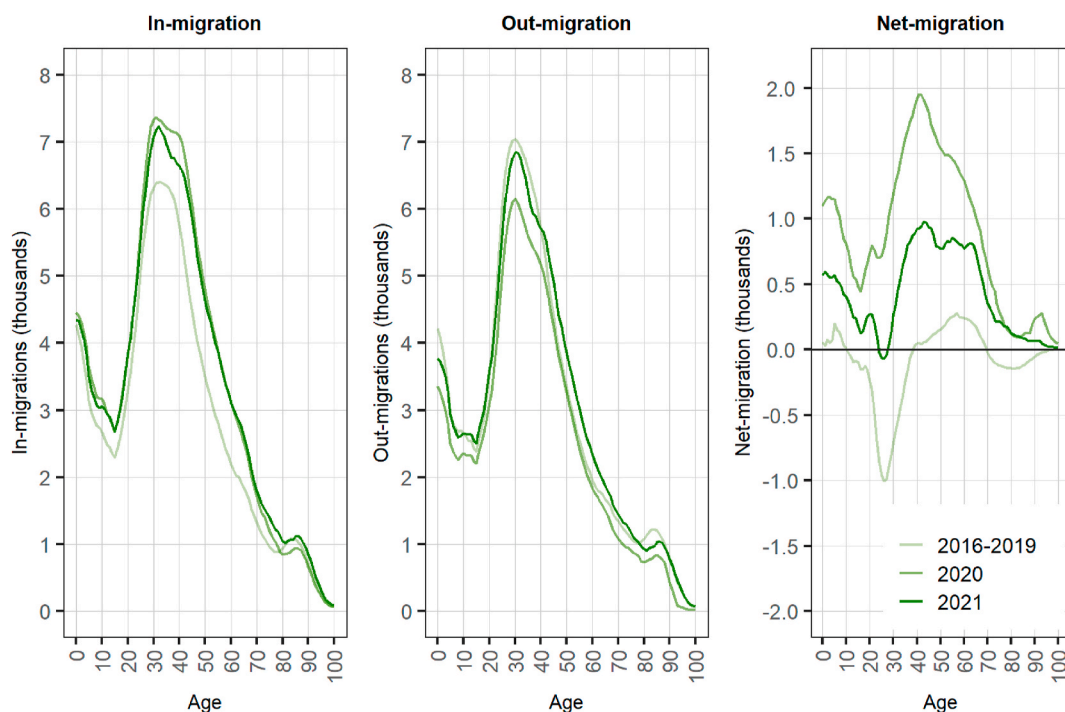


Fig. 4. Internal in-, out- and net-migration in rural areas by age: 2016–2019 (average), 2020 and 2021. Source: Own elaboration using data from the *Estadística de Variaciones Residenciales* (INE).

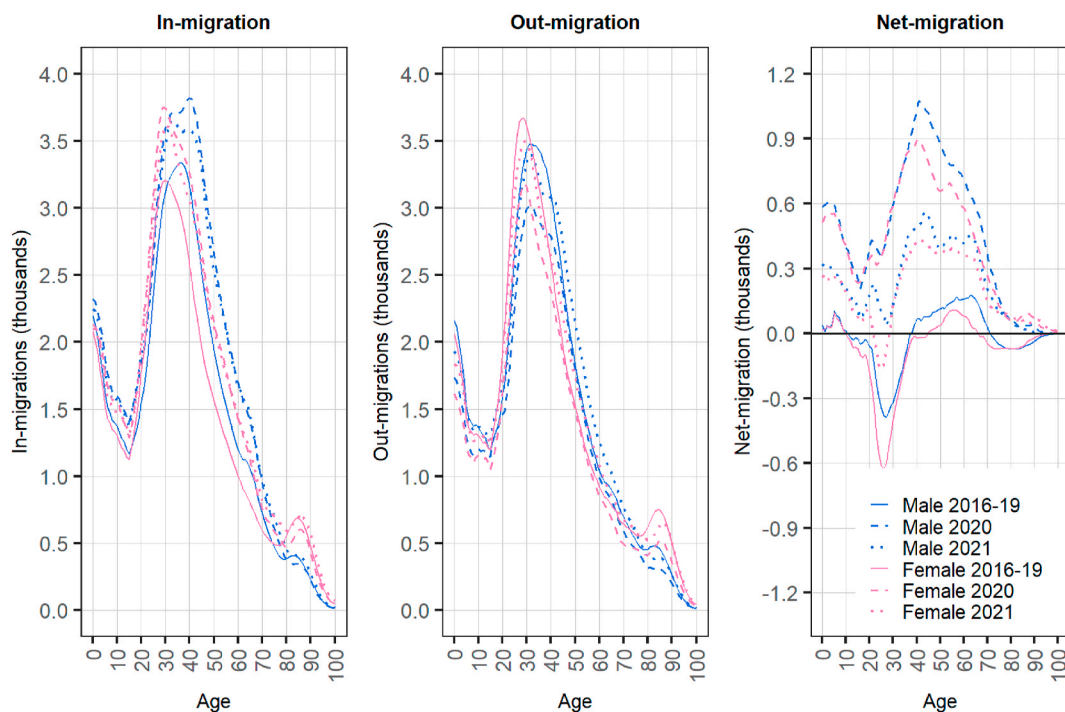


Fig. 5. Internal in-, out- and net-migration in rural areas by age and sex: 2016–2019 (average), 2020 and 2021. Source: Own elaboration using data from the *Estadística de Variaciones Residenciales* (INE).

areas during the pandemic appear to have chosen places in the close proximity to the provision of services in cities, and not so much remote villages lacking services and infrastructure with poor internet connection. The concentration of second homes in rural areas that experienced the greatest gains in net migration indicates that seasonal population played an important role in promoting internal migration flows from cities to low density areas during the pandemic.

We also present evidence of an increase in counterurbanisation movements involving both males and females of a wide age spectrum, mainly from 30 to 70 years of age, including childhood migration. Declines in out-migration, however, was more selective, involving exclusively young adults. These findings indicate a general trend of migratory movements to rural areas across populations in different stages of the life course. This is contradictory to the patterns observed in Germany,

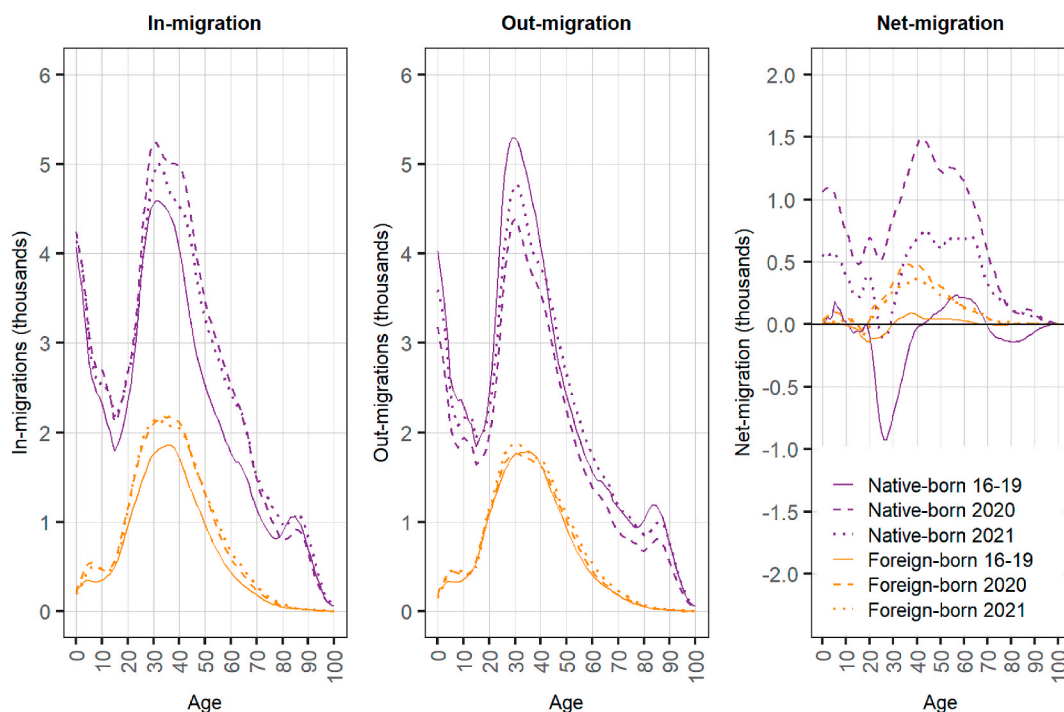


Fig. 6. Internal in-, out- and net-migration in rural areas by age and place of birth: 2016–2019 (average), 2020 and 2021. Source: Own elaboration using data from the Estadística de Variaciones Residenciales (INE).

where families and middle-aged people dominated counterurbanisation movements (Stawarz et al., 2022). Anecdotal evidence from Spanish media outlets suggested that young people and families moved to rural areas at a greater intensity (Nef, 2020; Galán, 2021). Yet, as we demonstrated, migration movements during the pandemic were not selective by age, including young adults, middle-aged people, families and retirees. We have found that the foreign-born population also moved to rural areas at a great intensity, but mostly Latin Americans of a wide age spectrum, a few people of middle age and retirees from EU-15 states and other high income countries and a small number of young individuals from Maghreb. High rates of marriage between Spanish nationals and Latin Americans (Rodríguez-García et al., 2015) could be a potential explanation for the large share individuals from this origin involved in counterurbanisation movements.

Overall, our evidence seems to reflect the wide set of socio-economic inequalities unveiled by COVID-19. It suggests that socioeconomic status played an important role in counterurbanisation flows during the pandemic. Populations of middle- and upper-class groups could afford to move probably because they have professional jobs which did not require face-to-face interactions and could be done remotely. These populations own second homes and have greater purchasing capacity to change their place of residence. Despite some evidence suggesting the importance of socioeconomic status and second homes, the EVR does not contain information about these variables. When available, 2021 Census data will allow analysing relationships between internal migration, socioeconomic status and availability of second homes during the pandemic.

The increase in counterurbanisation movements during the COVID-19 pandemic in 2020 had a significant population impact on rural municipalities. The arrival of population in sparsely populated areas generated a relatively considerable impact on their population size and structures, potentially cushioning aging levels. Although migration movement occurred across a wide age spectrum, they still involved a greater amount of young populations. However, increases in outflows had little impact on the demographic structure of large cities given their sheer population numbers. Despite changes in internal migration

patterns, we note that most movements continued to occur in core cities and suburbs, as before the pandemic.

Finally, whether the observed changes will endure the pandemic is an open question. Previous studies analysing monthly trends in internal migration during 2020 in Spain showed that patterns converged to those recorded before the pandemic in December (González-Leonardo et al., 2022b). However, it seems that it was an unusual month in the trend, since EVR data for 2021 demonstrated that high inflows to rural areas persisted over 2021, although monthly data also suggested a deceleration during the second half of 2021. In Great Britain, an increase in movement towards rural areas occurred only in periods of strict mobility restrictions (Rowe et al., 2022). 2022 data will allow to assess if changes on internal migration will endure the return to face-to-face work, implementation of hybrid forms of work and return to in-person teaching, which imply that the need to live close to the workplace has not disappeared. In addition, the re-opening of commercial and social activities in cities have reactivated the urban appeal.

We used administrative data from the EVR to analyse internal migration during the pandemic. As indicated in Section 3, these data were affected by under-reporting of changes in residence during the lockdown due to the closure of registration offices. They may have also been impacted by over-reporting due to untruthful residential registrations to avoid local and regional mobility restrictions. While we believe that the EVR provides an accurate representation of the internal migration trends during 2020 and 2021, the spatial distribution of these reporting issues remained unknown and difficult to unpack. Future work could examine the spatial patterns of internal migration drawing on digital footprint data sources, such as mobile phone location data, to substantiate the evidence provided in this paper.

**Declaration of competing interest**

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.



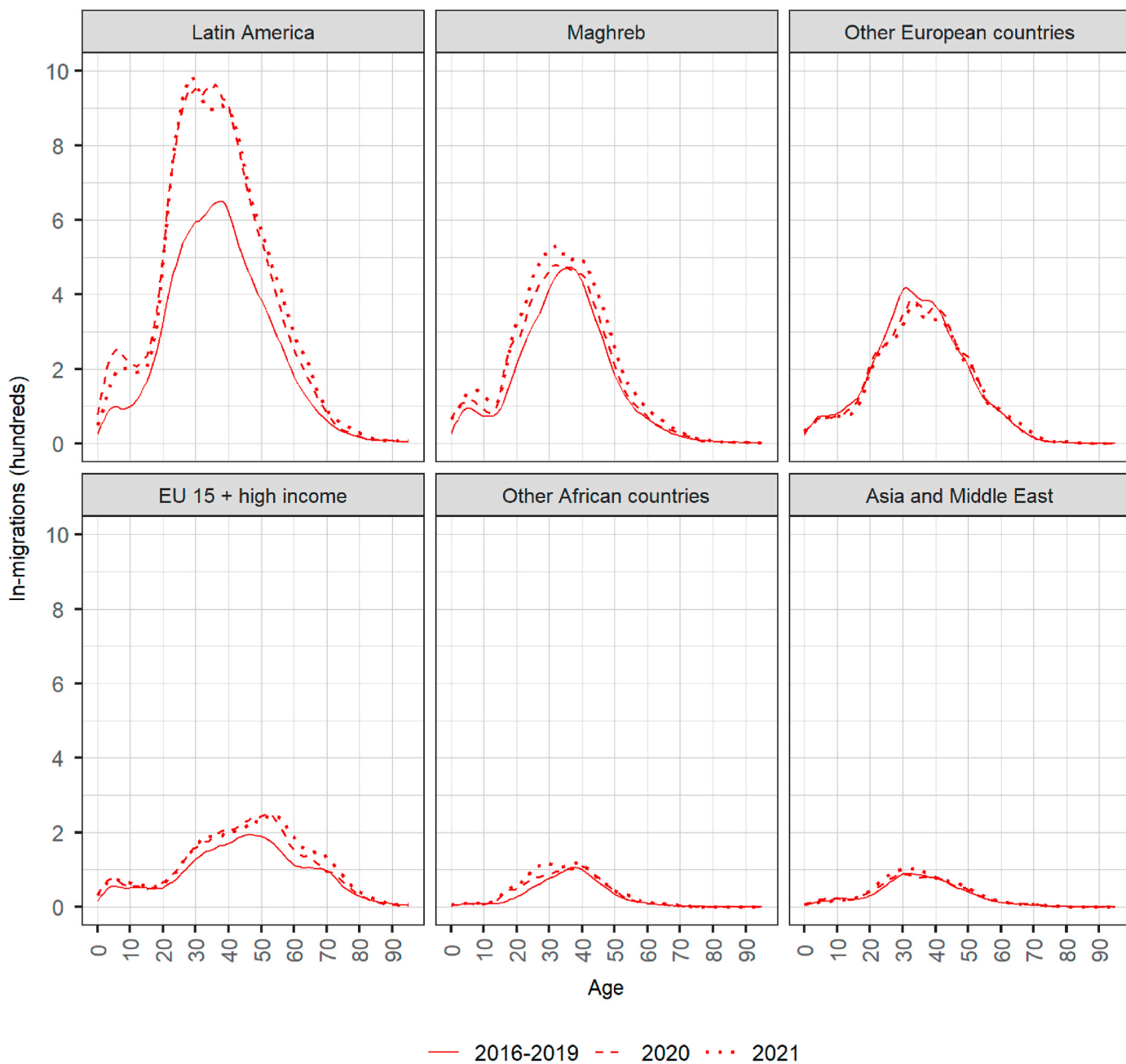


Fig. 7. Internal in-migration of foreign-born population to rural municipalities by age and country of birth groups: 2016–2019 (average), 2020 and 2021. Source: Own elaboration using data from the Estadística de Variaciones Residenciales (INE).

**Data availability**

The authors do not have permission to share data.

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## Appendix

**Table 1**  
Number of municipalities and population size by territorial typology: 2020

Type of municipality	Number of municipalities	%	Population in 2020	%
Core cities	79	1.0%	17,896,020	37.7%
Suburbs	662	8.1%	14,261,728	30.1%
Town	352	4.3%	7,299,486	15.4%
Rural areas	7038	86.6%	7,993,561	16.8%
<b>Total</b>	<b>8131</b>	<b>100.0%</b>	<b>47,450,795</b>	<b>100.0%</b>

Source: Own elaboration using data from the Cifras Oficiales de Población (INE) and Altas estadístico de la Áreas Urbanas from the Spanish Ministerio de Fomento, Movilidad y Agenda Urbana.

**Table 2**  
Number of municipalities and population size in rurales areas by distance from core cities and number of inhabitants: 2020

Distance from core cities	Inhabitants	Number of municipalities	%	Population in 2020	%
<40 K m	5000 to 10,000 inhabitants	295	4.2%	2,076,662	26.0%
	2000 to <5000 inhabitants	558	7.9%	1,742,190	21.8%
	<2000 inhabitants	3261	46.3%	1,629,965	20.4%
>40 K m	5000 to 10,000 inhabitants	108	1.5%	740,779	9.3%
	2000 to <5000 inhabitants	272	3.9%	843,998	10.6%
	<2000 inhabitants	2544	36.1%	959,967	12.0%
<b>Total</b>		<b>7038</b>	<b>100.0%</b>	<b>7,993,561</b>	<b>100.0%</b>

Source: Own elaboration using data from the Cifras Oficiales de Población (INE) and Altas Estadístico de la Áreas Urbanas from the Spanish Ministerio de Fomento, Movilidad y Agenda Urbana.

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