

Redefining rural entrepreneurship: The impact of business ecosystems on the success of rural businesses in Extremadura, Spain

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Abstract

PURPOSE: Regarding the growth of public policies fostering rural entrepreneurship, the primary objectives of this work involve examining the concept of rural entrepreneurship, identifying key aspects that differentiate it from non-rural entrepreneurship, and assessing the role of the local entrepreneurial ecosystem in supporting the initiation and growth of rural ventures. To achieve these goals, the study adopts a novel approach by integrating an analysis of rural entrepreneurship features with an exploration of the entrepreneurial ecosystem's impact. **METHODOLOGY:** After a review of the previous academic literature, the characteristics of rural entrepreneurship have been delimited, distinguishing it from non-rural. The research results have been obtained using a questionnaire, after a descriptive analysis of the sample, and an analysis of the difference in means by contrasting hypotheses using IBM SPSS Statistics 26. **FINDINGS:** This article explores the factors that contribute to rural entrepreneurship, challenging the notion that geographic location is the sole defining characteristic. Through the conducted investigation, it has been determined that a company's classification as rural is not solely based on its geographical location in rural areas or involvement in primary sector activities. Other aspects, such as a strong connection with the local community or the ability to create value, are also essential in defining a rural enterprise. Additionally, it examines how business ecosystems can foster the growth and success of rural entrepreneurship. **IMPLICATIONS:** This study provides an analysis of how rural entrepreneurship can drive endogenous development in rural areas. It also offers insights for government entities and policymakers to implement effective support measures and strategies in business ecosystems within rural environments. This study highlights that the resources found in rural entrepreneurial ecosystems may not be sufficient to support rural entrepreneurship. It's important to acknowledge that rural entrepreneurship requires specific resources that may not currently be available in business ecosystems. To increase the number of viable rural businesses, new resources tailored to rural entrepreneurship must be created, leveraging the area's endogenous resources and growth models. **ORIGINALITY AND VALUE:** This study examines the distinctive attributes of rural entrepreneurship, with a deliberate departure from exclusive emphasis on geographical location or primary economic sector. Drawing upon empirical research conducted among a cohort of rural enterprises, the analysis reveals that neither physical location nor primary sector affiliation substantially contribute to the establishment of these rural businesses. Instead, a profound connection to, and a heightened sense of belonging within the rural milieu emerge as pivotal determinants. Furthermore, rural entrepreneurship emerges as a promising avenue for the development of the region, offering substantial growth prospects. The investigation encompasses a scrutiny of the resources within the rural business ecosystem and their capacity to stimulate rural entrepreneurial activity. This emerging focal point represents a novel field of concern for governmental bodies and political institutions operating in rural areas.

Keywords: entrepreneurship, rural entrepreneurship, business ecosystems, rural business success, entrepreneurial ecosystem, rural development strategies, endogenous development, rural ventures, geographic location impact, local community engagement, policy implementation for rural areas, value creation, embeddedness

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INTRODUCTION

Rural areas face special conditions that affect their socioeconomic development where the entrepreneurship has been seen as a potential solution to the decline experienced in these areas. It can stimulate the rural economy, create jobs, and counteract depopulation. By capitalizing on the attractive factors of the rural context, entrepreneurship can play a crucial role in revitalizing these regions. To promote entrepreneurship in rural areas, governmental entities are dedicating significant efforts to designing effective strategies. These strategies include implementing supportive measures and establishing entrepreneurial ecosystems that foster the development of these territories.

The European Union is striving to rejuvenate rural areas by encouraging entrepreneurship, as these areas constitute more than 75% of the land area of member countries (European Commission, 2020, 2021a). In Spain, rural areas make up a significant part of the territory (Bank of Spain, 2021; Ministry of Agriculture, Fisheries and Food, 2021), with over 80% of the country's land area classified as rural (Figure 1). Extremadura is one of the least developed regions in Europe (European Commission, 2021b). The region of Extremadura in Spain is mainly rural, and entrepreneurship in this area does not seem to be generating the expected outcomes in terms of promoting socio-economic development.

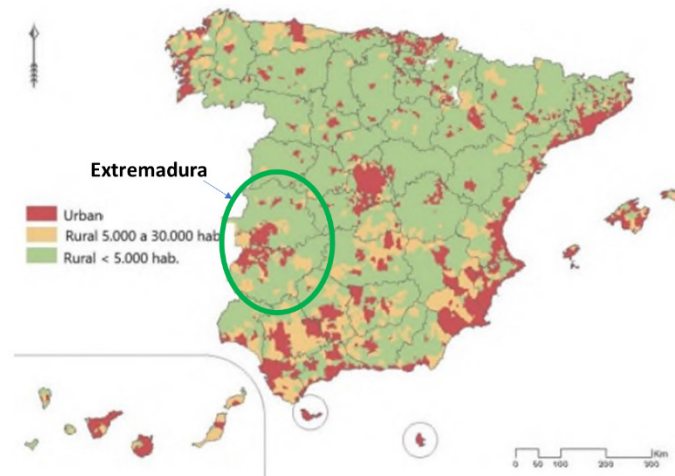


Figure 1. Rural territory in Spain and Extremadura

Source: Adapted from The Spanish Ministry of Agriculture, Fisheries, and Food (2021).

The Extremadura region's strong rural character has resulted in many entrepreneurial ventures in the area being labeled as rural entrepreneurship based solely on geographic location. However, in our opinion this classification fails to consider other important factors specific to the rural context that can affect the creation of new businesses in these territories. Additionally, rural and urban areas within the same country can have distinct social and economic differences due to differences in lifestyle and livelihoods (Van der Ploeg et al., 2015), and this suggests that entrepreneurship may also vary depending on the location.

The definition of rural entrepreneurship is being scrutinized in light of its defining characteristics, particularly whether geographic location in rural areas is the sole factor in identifying it. It is crucial to delve deeper into the concept of rural entrepreneurship and determine a range of dimensions that go beyond physical space to establish the essential criteria for identifying an effective rural entrepreneurship venture. Additionally, it is vital to investigate the extent to which entrepreneurial ecosystems in rural areas are aware of the unique features of rural-focused entrepreneurship and provide suitable and customized support to rural entrepreneurship in these regions. These are the primary research questions presented in this research.

This research aims to determine what factors influence the degree of rurality of a venture to consider it as a rural enterprise compared to a non-rural enterprise, and if business ecosystems consider these factors to design resources and strategies that promote rural entrepreneurship in rural areas. Extremadura's rural character and lower degree of development compared to other Spanish regions make Extremadura an ideal location for research. By understanding the challenges faced by entrepreneurs in rural areas, and how ecosystems influence the generation of new companies while taking into account the unique characteristics of the rural areas, we can gain valuable insights to enhance rural

entrepreneurship as a driver of development in the region. It is worth noting that the researchers of this article are professionals based in Extremadura.

After this introduction, we present a literature review focused on the meaning of rural entrepreneurship, related concepts, and the relationship with the entrepreneurial ecosystem. Later, the method is presented, and the research developed includes a theoretical model, which is tested empirically, followed by a section on results, and a final section for conclusion.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

In researching entrepreneurship in rural areas, various interconnected concepts were explored in the literature. These concepts revolve around the phenomenon of entrepreneurship and are specifically relevant to the study of the concept in rural areas.

Entrepreneurship has become an important factor in a country's economic development, according to Kovanen (2021). With entrepreneurial individuals' impact on global economies, the figure of the entrepreneur has gained significant recognition in the last decades. Authors such as Gautam and Lal (2021) or the European Union have researched entrepreneurship and its economic contributions, as well as the personality and motivation required for it, whether it is driven by necessity or opportunity (Fairlie & Fossen, 2020). Economic literature has recognized the role of entrepreneurship in fostering innovation, economic growth, new technologies, job creation, and societal well-being (Crudu, 2019; Kovanen, 2021), making it a subject of study in various disciplines such as economics, sociology, and psychology.

Throughout history, the idea of entrepreneurship has developed from Cantillon's original concept (Thornton, 2020) to the modern day. Schumpeter introduced the notion of entrepreneurship having the potential to greatly impact and change the market (Mehmood et al., 2019; Callegari & Nybakk, 2022). This has been recognized as a crucial element in the socio-economic progress of any nation. Many individuals and organizations, including OECD (1998) and the European Commission (2003a, 2003b), recognize entrepreneurship's significance and have made efforts to promote policies that encourage business creation and increase the number of entrepreneurs in their respective countries. Spain has its own law, the Law for the Support of Entrepreneurs (Law 14/2013 of September 27th), that regulates and defines various aspects that affect entrepreneurs and provides support for entrepreneurship within its borders.

In this examination of vocabulary, the European Union (EU) defines "rural areas" as places where more than half of the population resides in rural municipalities. Rural communities are further categorized by having a population density of less than 150 inhabitants per square kilometer (European Network for Rural Development, n.d.). However, there is no definitive definition of the term due to various factors that affect rural areas, such as physical, socioeconomic, environmental, and institutional factors. As a consequence, it is challenging to establish a precise definition of rural areas that applies to all member states. Also, the EU defines "rural areas" as all areas outside of urban clusters. An urban cluster is defined as a group of 1 km² with a minimum population density of 300 inhabitants per km² and a minimum population of 5,000 (Eurostat, n.d.).

Entrepreneurship in rural areas is often hindered by lower levels of development, depopulation, and a lack of infrastructure and services compared to urban areas. However, rural areas make up a significant percentage of the territory, making it crucial for global government entities to prioritize promoting entrepreneurship in these regions. This can be done by utilizing local resources, identifying strengths in the rural environment (Galvão et al., 2020), and highlighting attractive factors such as the quality of life for residents (Vaishar et al., 2018).

In Spain, the definition of rural environment is based on specific territorial criteria outlined in the Law for the Sustainable Development of the Rural Environment (Law 45/2007 of December 13th). This law defines the rural environment as a geographic space comprising a group of municipalities with fewer than 30,000 inhabitants and a population density of less than 100 inhabitants per square kilometer. Additionally, the law defines a small rural municipality as one with less than 5,000 inhabitants and integrated into the rural environment.

Regarding the term "rural entrepreneurship," the fusion of the previous meanings would suggest, in simple terms, that rural entrepreneurship is the creation of a business in a rural area. However, this may not be the correct and exact definition. The literature on this topic confirms that there is no definitive definition of rural entrepreneurship. As interest in this area grows, there are various perspectives trying to understand the different aspects and foundations of rural entrepreneurship.

Following Pato and Teixeira (2016), Wortman (1990) was the first to conceptualize rural entrepreneurship. He defined it as the process of introducing a new product or technology to the market by starting a new business in a rural area. Henry and McElwee (2014) agree with Wortman's view that rural entrepreneurship involves establishing a business in a rural setting. However, they questioned whether starting a business in a rural area differs significantly from starting one in an urban area, considering only the difference in geographic location. As a result, there is no single clear definition of rural entrepreneurship, and various perspectives exist regarding its extent and characteristics.

Korsgaard et al. (2015) differentiate between rural entrepreneurship and entrepreneurship in a rural setting, regarding them as distinct concepts. Rural entrepreneurship refers to businesses that are closely tied to the rural surroundings, utilizing rural resources to create value in entrepreneurship. Therefore, rural entrepreneurship cannot be relocated to another environment without losing some of its value proposition due to its deep ties with the rural context (Müller & Korsgaard, 2018). However, entrepreneurship in a rural setting does not necessarily imply a close connection to it. In this scenario, the rural environment is a crucial resource for generating economic activity, but creating value within the rural setting would not be the main objective of this type of entrepreneurship. According to Akgün et al. (2010), rural entrepreneurs are greatly influenced by their rural environment and have strong links with their local community. This connection to their surroundings distinguishes them from other types of entrepreneurs, as they have a unique connection to the resources and context of their rural location (Gyimah & Lussier, 2021). The location plays a significant role in shaping rural entrepreneurship beyond just its geographical aspects.

In terms of productive industries, rural entrepreneurship has traditionally been linked to primary sector pursuits like farming and raising livestock. In contrast, urban areas typically have a greater focus on service-based industries. However, according to experts like Arias-Vargas et al. (2022), entrepreneurs in rural areas are not restricted solely to agriculture-related ventures. In fact, various entrepreneurial opportunities are available in rural contexts that can be considered part of rural entrepreneurship.

Despite significant interest in rural entrepreneurship, there is still debate over what qualifies as a rural initiative. The criteria for defining rural entrepreneurship are varied, and the current literature offers multiple interpretations (Table 1). While the literature provides insight into potential dimensions of rural entrepreneurship, these interpretations may vary depending on the author. However, is there any distinction between these businesses, regardless of location?

Table 1. Characteristics of rural entrepreneurship

Authors	Elements of rural entrepreneurship
Bosworth (2012)	<ul style="list-style-type: none"> Located in a rural area Serve rural population Sell a rural product
Henry and McElwee (2014)	<ul style="list-style-type: none"> Location in a rural setting Employs local people Contribution to gross value-added
Korsgaard et al. (2015)	<ul style="list-style-type: none"> Space is an essential element, not relocation of the venture Contribution to the value creation of the space Sense of responsibility and commitment to the community Loyalty to the territory Endogenous resources Creation of social and economic value in the territory Localities resilient to global changes
Pato and Teixeira (2018)	<ul style="list-style-type: none"> Location in a rural setting Employs local people Sells a rural product Uses and provides local products
Muñoz and Kimmitt (2019)	<ul style="list-style-type: none"> Landscape imprinting Rural natural capital Rural built assets Social environment of rural entrepreneurship Cultural sphere of rural entrepreneurship Cultural positioning Territorial embeddedness Place-sensitive products Localized institutional support Collaborative spaces for advancing rural enterprising Place-sensitive trading

Rural entrepreneurship refers to entrepreneurial activity in a rural setting. The characteristics of the rural context play a significant role, but globalization and social/economic transformations can complicate the differences between rural and urban societies, making rural spaces multifunctional places where infrastructure has been improved, and the economy has been outsourced (Delgado-Viñas & Gómez-Moreno, 2022). It seems that rural entrepreneurship focuses on agricultural and livestock activities and yet, today, rural areas offer various economic opportunities classified as rural entrepreneurship outside of primary sector activities.

Several notable investigations have been conducted in the field of the definition of rural entrepreneurship, including the works of Bosworth (2012), Henry and McElwee (2014), Pato and Teixeira (2018), and Muñoz and Kimmitt (2019), mainly. These studies explore whether physical space is the primary distinguishing feature of rural entrepreneurship when compared to other types of entrepreneurship.

According to Bosworth's (2012) definition, a rural enterprise is characterized by three key elements: geographic location, serving a rural customer base, and selling a rural product. The author emphasizes that geographic location is particularly significant in identifying rural entrepreneurship, as it offers certain advantages for economic activities that are specific to rural areas compared to urban environments. Similarly, Henry and McElwee (2014) suggest that rural entrepreneurship is based on location in rural areas, local employment, and contribution to the creation of value of the territory. However, they also acknowledge that external elements affect both rural and urban enterprises, making the differences between the two minimal. Pato and Teixeira (2018) build upon the works of Bosworth (2012) and Henry and McElwee (2014), proposing a four-element model that includes geographic location, local employment, the sale of a rural product, and the use of local products. By combining these elements, Pato and Teixeira (2018) provide another definition of rural entrepreneurship. Muñoz and Kimmitt (2019) created a framework for rural entrepreneurship that is categorized into four sections. Each category consists of different dimensions that define rural entrepreneurship, utilizing the resources available in rural areas. The first category is based on location, including landscape imagery, biophysical resources, and rural heritage. The second category is based on social and cultural factors that drive entrepreneurship. The third category is rooted in cultural positioning, territoriality, and products that are sensitive to the location. Finally, the fourth category focuses on the business dynamics, including institutional support, collaborative spaces, and commerce that is mindful of the location.

After examining the theoretical aspects of rural entrepreneurship, it became evident that several ventures, often categorized as primarily rural, may not align with all the necessary characteristics. All the above let us set up the following hypothesis:

H1: Many of the ventures considered rural do not meet all the required characteristics to be effective rural ventures.

The idea of endogenous development is closely linked to entrepreneurship, as it is seen as a way to improve the economic and social growth of regions, particularly rural ones. Therefore, it is important to focus on this concept to determine how rural entrepreneurship can contribute to endogenous development in rural areas. The well-being of the population is largely dependent on the ability of regions to generate wealth, and endogenous development is a complex process that involves various dimensions, including economic, political, social, environmental, technological, and territorial aspects (Vázquez-Barquero, 2007).

In contrast to exogenous development, the endogenous approach aims to gain a competitive edge from local environmental resources, treating them as crucial assets for regional development (Bosworth et al., 2020). This aligns with communities collectively addressing challenges and fostering growth through local resources and efforts (Morretta, 2021). Unlike endogenous development, exogenous development requires an external element, acknowledging that not all locations have the necessary conditions for promoting internal growth (Morretta, 2021). Therefore, external companies lead entrepreneurial projects to boost economic growth in exogenous development, while endogenous development relies on internal factors for growth.

The ideas of endogenous and exogenous development are linked to the progress of local communities and have similarities with the viewpoints on rural entrepreneurship and entrepreneurship in rural areas explored in this study. Endogenous development focuses on the importance of physical space in addition to geographic location or land use. Local identity, culture, and economic factors shape initiatives in the area, giving them a unique personality and purpose. Rural entrepreneurship, as defined by Korsgaard et al. (2015), is an example of this concept. In contrast, exogenous

development is not influenced by the surrounding context. Physical space is simply a resource for businesses that choose to locate in rural areas for reasons other than creating value in the rural environment.

The pivotal role of the entrepreneurial ecosystem in fostering entrepreneurship within various contexts has prompted numerous scholars to conduct extensive research on its evolution and impact. According to Galvao et al. (2020), Moore (1993) is credited as the originator of the entrepreneurial ecosystem concept. Moore explained how various independent individuals with a common goal of creating value can collaborate to enhance innovation and entrepreneurship within a specific environment. Mazzarol (2014), along with Audretsch and Belitski (2017), and Spigel (2017), stand as notable contributors acknowledging the intricate complexities inherent within entrepreneurial ecosystems. These ecosystems play a significant role in the socio-economic development of the areas where they exist, involving a diverse range of individuals and organizations. As articulated by Mazzarol (2014), the conceptualization of an entrepreneurial ecosystem delineates a structural framework aimed at fostering economic expansion and innovation through the cultivation of entrepreneurial endeavors and facilitation of small business advancement. Similarly, Spigel (2017) suggests that entrepreneurial ecosystems arise from a combination of social, political, economic, and cultural factors coexisting in a physical space, which enables the growth of new and innovative companies. Audretsch and Belitski (2017) describe an entrepreneurial ecosystem as a complex system where interactions between different agents can result in the creation of new businesses.

Isenberg's (2011) research on entrepreneurial ecosystems is highly regarded in this field. He presents a model consisting of several domains considered as necessary for a successful entrepreneurial ecosystem. These domains include policy, human capital, finance, market, culture, and support. All the above let us set up the following hypothesis:

H2: The entrepreneurial ecosystem positively influences rural firms.

After this previous literature review, the goal of this work is twofold. First, to identify the components considered necessary for categorizing an entrepreneurship activity as rural. Second, to determine whether business ecosystems are knowledgeable about these essential factors, in order to positively influence in rural entrepreneurship.

METHODOLOGY

Method

IBM SPSS Statistics 26 has been used for descriptive statistics to describe the basic features of the data in the study and also regarding the contrast of the hypotheses. We conducted a non-parametric analysis of the difference of means, employing the Mann-Whitney U and Kruskal-Wallis H tests due to the assumed non-normality of the variables. This analysis contrasted the global indicators for the degree of rurality (referred to as RURAL) and the entrepreneurial ecosystem (referred to as ENTECO) with the sample-characterizing variables.

Instrument

We used an ad hoc questionnaire based on the literature review, which is one of the most widely used tools to collect data, especially in social science research (see Appendix). The authors of this article created a questionnaire that asked questions about the factors comprising each research construct. In order to send out a questionnaire, a database was created for both public and private entities, such as municipalities and business associations of the studied region. During July 2022, these entities were contacted by telephone and requested to participate voluntarily in the questionnaire distribution among the companies in their respective municipalities. On July 18, 2022, the research form was sent out to the contacted entities, and the process of receiving responses ended on August 1, 2022. To analyze the questionnaire effectively, we divided it into three blocks. The first block includes descriptive questions to characterize the sample, which we analyzed using Excel. In order to implement the practical component of our project through the questionnaire, we devised two constructs:

- 1) RURAL, that is the level of rurality of the company. In our study this term refers to the extent or degree to which a particular business or enterprise is connected to rural areas, not only a business situated in the rural area.
- 2) ENTECO, that is the extent to which entrepreneurs perceive the entrepreneurial ecosystem as influential on their business. This construct pertains to the entrepreneur's subjective assessment of the significance or impact of the broader entrepreneurial environment on their own business endeavors.

The RURAL construct concentrates on various dimensions of rural entrepreneurship that we have carefully considered in the theoretical section, while the ENTECO construct focuses on the characteristics of the entrepreneurial ecosystem. These constructs have been developed based on the interrelationships identified in our theoretical framework and are shown in detail in the following section.

The designed questionnaire utilizes a Likert scale to assess the degree of agreement and acceptance for each proposed dimension on a scale of 1 to 5, with 1 being the lowest and 5 being the highest. The first block contains questions aimed at obtaining a general description of the companies participating in the research, asking for aspects such as gender, business and birth location among the municipalities in the region, age of the business, activity sector, rural business perception, main reason for creating a business, employed people in the business and annual income level. The second block contains questions related to items that compose RURAL, to analyze the degree of rurality in the sample. The third block devoted to ENTECO contains several questions related to items used to examine how much the region's business ecosystem affects the surveyed companies.

Measures

Based on the analysis of previous works on the field, the RURAL construct has been developed by combining seven dimensions that align with the previous approaches which are described in Table 2. These seven dimensions are value creation, feeling of emdeddedness, rural customers, rural suppliers, endogenous resources, location in rural areas and employ local people. The ENTECO construct has been developed focusing on five of the six domains defined in Isenberg's (2011) ecosystem model, namely politics, finance, market, culture, and support (Table 3).

Table 2. RURAL scale

Items
Degree of importance of value creation and contribution to the socioeconomic development of the community to start a business (RURAL1)
Degree of importance of roots and links with the community to start a business (RURAL2)
Degree of belonging of clients to the local community (RURAL3)
Degree of belonging of providers and supports to the local community (RURAL4)
Degree of importance of the endogenous resources of the territory in the development of business activity (RURAL5)
Degree of importance of the location in the rural environment for the viability of the business (RURAL6)
Degree of belonging of employees to the local community (RURAL7)

Table 3. ENTECO scale

Items
Perception of public policies in the ecosystem (ENTEKO1)
Use of public policies of the ecosystem in the creation of its own business (ENTEKO2)
Perception of the creation of new companies in the ecosystem (ENTEKO3)
Influence of the ecosystem in the creation of its own business (ENTEKO4)
Perception of the disposition of the market in the ecosystem (ENTEKO5)
Influence of the disposition of the market in the creation of its own business (ENTEKO6)
Perception of the existence of financial resources in the ecosystem (ENTEKO7)
Use of financial resources of the ecosystem in the creation of its own business (ENTEKO8)
Use of own financial resources in the creation of its own business (ENTEKO9)
Use of external financial resources (banks) in the creation of its own business (ENTEKO10)
Use of external financial resources (family and friends) in the creation of its own business(ENTEKO11)
Use of aid and subsidies in the creation of its own business (ENTEKO12)
Use of other types of financial resources (ENTEKO13)
Perception of entrepreneurial culture and values in the ecosystem (ENTEKO14)
Individual perception of entrepreneurial culture and values (ENTEKO15)
Perception of other public and private aid for entrepreneurship in the ecosystem (ENTEKO16)

Sample

After developing the research constructs, we proceeded with the empirical phase of the study by selecting a region in rural Extremadura and choosing a sample of companies to test our hypotheses. Our research was based on the results of a questionnaire sent to 200 companies located in the region of Extremadura, and only 89 companies answered the questionnaire. The research takes place in the Zafra-Río Bodi6n region (Figure 2) located in the province of Badajoz (Extremadura, Spain). This region comprises 15 municipalities over 1,100 square kilometers and is home to approximately 46,000 inhabitants (IEEX, 2022). The characteristics of the sample population are shown in Table 4.



Figure 2. Map of municipalities in the Zafra - Río Bodi6n region.

Source: Extremadura Rural Development Network (2015).

Table 4. Characteristics of the sample population

Category	Groups	Total of 89
Gender	Male	37
	Female	52
Location	In the region	82
	Other region	7
Age	Less than 2 years old	21
	Between 2 and 5 years old	19
	Between 5 and 10 years old	15
	More than 10 years old	34
Economic Sector	Agriculture and livestock sector	4
	Industrial sector	5
	Construction sector	4
	People services sector (retail trade, hospitality and catering, health and well-being...)	42
	Business services sector (wholesale trade, consulting, advertising...)	13
Perception of rurality	Yes	47
	No	42
Reason to create a new venture	Have autonomy and independence at work	29
	Achieve a personal challenge	26
	Means of subsistence (need to have a job)	7
	Other (put entrepreneurial skills into practice, commercially exploit their knowledge and personal experience...)	27
Employment generation	Yes	42
	No	47
Annual Income	Less than €50,000	52
	Between €50,000 and €150,000	18
	Between €150,000 and €300,000	9
	Between €300,000 and €500,000	2
	More than €500,000	5

Around 80% of the municipalities have less than 5,000 residents, and this population makes up 31.12% of the region. It is a region predominantly rural where the population has experienced a decline over the last decade, decreasing by 3.5% overall (INE, 2022). This is a common trend in all municipalities except Zafra, the main urban center of the territory, with over 16,000 inhabitants. Although Zafra’s population has slightly increased, it does not justify the decrease seen in the rest of the region. To this must be added the fact that the territory has a low population density (25 inhabitants per km²), which is below the Spanish average (94 inhabitants per km²).

There are around 5,785 companies in the region (8,71% of the total companies in Extremadura) with representation of the three economic sectors. Apart from the town of Zafra, where the services sector dominates (commerce, hospitality, transportation), the primary economic activity in the municipalities of the region is the services sector (59,63%). In second place, activities within the secondary sector, mainly agriculture and livestock, are prominent. The majority of businesses are small, one-person enterprises.

In the region’s entrepreneurial ecosystem, there are public policies and measures in place to support entrepreneurship. Additionally, there are public and private resources available to promote business growth, including various financial resources for the creation and support of companies in the area. However, most companies rely on traditional businesses and lack innovation and internationalization in their activities. According to INE and IEEX (2022), the level of entrepreneurial culture in Extremadura is lower than the national average, although there are enough resources available for training and supporting the establishment of micro-enterprises.

RESULTS

In this study, which comprised 89 cases, it was observed that female participation was higher (58.43%) than male participation (41.57%). The majority of the companies in the sample belonged to the studied region (92.13%), but there were also responses from companies located in adjacent municipalities to Zafra - Río Bodión. Most participating individuals were born, raised, and developed their businesses in the studied region. Only a small percentage of individuals (19.10%) came from other territories outside the region and chose to establish their livelihood in this rural context. These findings suggest that most participants preferred to start their businesses in their own territory, emphasizing the importance of roots as a dimension in studying the degree of rurality of a company. The study included a diverse range of companies with varying degrees of age. Young and established companies were equally represented, with 23.60% of the companies being active for less than two years, 21.30% active for two to five years, 16.90% active for five to ten years, and 38.20% active for over ten years. Although the participating companies represented different sectors, the majority (47.20%) belonged to the personal services sector. For the perception of rurality, 52.80% of the companies identified themselves as rural enterprises, and 47.20% declined to answer the question. The primary reason for companies choosing to establish themselves in a particular area is to attain autonomy and independence in their work. In addition, a personal challenge was also a motivating factor. However, contributing to the well-being of the local community or generating employment were not cited as reasons for starting a business in the area. Out of the participating companies, 52.81% have employed workers within their organization, and most of these companies are small businesses with an annual turnover of less than €50,000.

After this characterization of the sample, main descriptive statistics are shown in Table 5, for RURAL, and in Table 6 for ENTECO.

Table 5. Descriptive statistics of RURAL

	Minimun	Maximun	Average	Standard deviation
R1	1	5	3.80	0.890
R2	1	5	3.90	1.069
R3	1	5	3.70	1.668
R4	1	5	3.11	1.624
R5	1	5	3.12	1.519
R6	1	5	2.37	1.191
R7	1	5	2.85	3.763
RURAL	1.14	4.57	3.2651	0.455

Table 6. Descriptive statistics of ENTECO

	Minimum	Maximum	Average	Standard deviation
E1	1	5	2.44	1.272
E2	1	5	2.33	1.154
E3	1	5	3.18	1.104
E4	1	5	2.74	0.921
E5	1	5	2.78	1.176
E6	1	5	2.57	1.179
E7	1	5	2.88	1.041
E8	1	5	2.73	0.836
E9	1	5	3.08	1.346
E10	1	5	3.67	0.859
E11	1	5	3.07	1.154
E12	1	5	3.17	2.324
E13	1	5	1.74	1.353
E14	1	5	1.49	0.935
E15	1	5	1.69	1.036
E16	1	5	1.22	0.563
ENTEKO	1.44	3.50	2.5500	0.203

Upon statistical analysis of the degree of rurality of companies in the sample, it was discovered that all participating companies have some level of rurality (mean of 3.26 out of 5). However, none meet the criteria to be classified as completely rural. Some companies showed a high level of rurality (maximum values of 4.57 out of 5). The lowest average was found in the item RURAL6, which refers to geographical location in rural areas, while the highest average was related to roots and connection to the territory (RURAL2). Therefore, RURAL2 is an important dimension to analyze the degree of rurality in the sample.

For RURAL1, which relates to creating value and promoting socioeconomic development, more than half of the companies surveyed rated it as important (48.31%) or very important (21.35%), with a high mean in the analysis. As indicated, RURAL2, which pertains to connection to the local community, was found to be extremely relevant for the companies surveyed. This factor strongly influenced the business decisions of entrepreneurs in the region, with the highest average rating in the analysis (46.07% important and 29.21% very important). This dimension may be the deciding factor for a company's level of rurality, based on the emotional connection and sense of belonging the project (and its people) have towards their local environment. Ultimately, this generates economic and social wealth for the community by valuing the different elements that contribute to the rural environment.

Based on rural customers in the RURAL3 item, the companies in the sample seem to focus on local customers. According to the survey, most of the respondents (33.71% totally agree and 31.46% agree) agree with this opinion. When it comes to the RURAL4 item, which deals with suppliers from the local community, there are more diverse responses. The companies that were surveyed have suppliers from both local and non-local areas, with only a small percentage (14.61% of the sample) preferring local suppliers.

After analyzing the level of rurality among the companies in this study, it appears that utilizing local resources (reflected in RURAL5) in the area does not play a significant role. The findings regarding dimension RURAL4 (suppliers) are comparable, suggesting a potential correlation between the two. A small percentage (14.61%) of the surveyed companies exclusively rely on local resources for their operations, indicating that they do not depend heavily on these resources.

It is important to analyze the level of rurality of a company, especially for those located in rural areas. Based on the RURAL6 item, which refers to geographic location, only 5% of companies in the sample think that operating in a rural environment is advantageous for their business. Conversely, most of the companies surveyed believe that moving to a non-rural environment could improve their business without interrupting operations (62.92% of surveyed companies). The correlation between RURAL6 and other items suggests that personal and non-professional reasons may be the primary factors that influence attachment to the territory (RURAL2).

Additionally, the resources within the region (known as RURAL5) may not be sufficient or available to support the integration of business activities. Companies that can easily relocate may not fulfill the needs of the local community, lack necessary raw materials that are only obtainable within the area, or function in a way that does not benefit the environment. As a result, they cannot be classified as successful rural enterprises, but rather as entrepreneurship within rural zones.

According to the RURAL7 item, which assesses local employment, most of the individuals employed by the companies in the sample are part of the community (77.55% of the surveyed companies). This helps create job opportunities within the area and improves the social and economic environment of rural communities.

The second part of the data analysis aims to examine how much the region's business ecosystem affects the surveyed companies. For that purpose, the ENTECO construct encompasses five dimensions, namely politics, finance, market, culture, and support—elements previously examined in Isenberg's (2011) ecosystem model.

Table 6 provides a descriptive analysis of the data. All the companies that were surveyed have some level of knowledge about the resources available in the region's entrepreneurial ecosystem. The average score for this understanding was 2.55 out of 5. However, it's crucial to mention that this knowledge doesn't always result in tangible benefits for the companies that took part in the survey.

The survey results indicate that a majority of companies do not support public policies and measures that aim to aid entrepreneurship. Specifically, 32.58% of respondents disagree and 23.60% completely disagree with the effectiveness of these measures. Moreover, only 15% of respondents reported benefiting from these policies. Interestingly, more than half of the surveyed companies stated that they have not utilized these measures to enhance their businesses. Despite this, the ecosystem of the region appears to be generating new ventures to some extent, with 38.20% of respondents agreeing and 6.74% completely agreeing with this statement. A significant portion of the companies surveyed have benefited from the resources of the region's ecosystem at some point in their business careers, with 21.35% experiencing quite a bit of benefit and 39.33% experiencing some benefit. However, only 1.12% of companies consider the influence of the ecosystem to be relevant to their venture.

Many companies participating in the study believe there are insufficient financial resources to establish and grow ventures in the region. The results show a notable degree of dissatisfaction with this aspect of their operations, with 32.58% disagreeing and 11.24% completely disagreeing. This could be due to a lack of awareness of the resources available in the ecosystem, or because the resources are not aligned with their business needs. Surprisingly, over half of the companies surveyed have used these resources little or not in their business careers. According to the research, the most common way of financing a new business in the region is self-financing, even though other external funding sources are available. More than 60% of the businesses in the study have used at least 60% of their own funds to create their business. In the region, there is a debate surrounding the market with differing opinions. According to a survey, 33.71% of companies believed that the market had little impact on their business, despite receiving support from customers and suppliers who contribute to the rural economy.

In the second part of the statistical analysis for RURAL and ENTECO constructs, we performed a difference in means analysis. Since the variables were not normally distributed, we used non-parametric tests. RURAL and ENTECO constructs were compared to categorical variables used to characterize the sample (Table 7). Consequently, the second hypothesis H2 has been divided into sub-hypotheses from H2a to H2h.

Table 7. Analysis of difference in means of RURAL and ENTECO

		RURAL	ENTECO
Hypothesis H2 (sub-hypotheses)	Test	p	p
H2a - Gender	Man-Witney	0.655	0.983
H2b - Location	Kruskal-Wallis	0.380	0.545
H2c - Age	Kruskal-Wallis	0.316	0.010
H2d - Economic Sector	Kruskal-Wallis	0.299	0.863
H2e - Perception of rurality	Man-Witney	0.000	0.254
H2f - Reason	Kruskal-Wallis	0.381	0.392
H2g - Employment generation	Man-Witney	0.000	0.814
H2h - Annual income	Kruskal-Wallis	0.610	0.827

The distribution of RURAL is the same between the categories of gender, location, age, economic sector, reason for starting a business, employment generation, and annual income. However, the distribution of RURAL is different for the perception of rurality (H2e), where the mean of “yes” (3,54) is higher than that of “no” (2,98). Therefore, those who perceive themselves as rural actually have a higher degree of rurality than those who do not perceive themselves as such. The distribution of RURAL is different for the employment generation categories (H2g), where the average of the first category is 3.52 and that of the second category is 3.08. Therefore, those with a higher degree of rurality are those who create jobs. The data shows that rural enterprises tend to create more employment opportunities than non-rural counterparts. This indicates that rural businesses indirectly contribute more to the overall wealth generation in the area, despite not having it as their main focus.

Regarding the distribution of ECOEMP, we can say that it is the same between the categories of all the variables considered except those of age. The ECOEMP distribution is different for the age categories (H2c). The average for each category is the following: category 1 (less than 2 years old) has 2,78, category 2 (between 2 and 5 years old) has 2,62, category 3 (between 5 and 10 years old) has 2,51, and finally, category 4 (more than 10 years old) has 2,38. Thus, the entrepreneurial ecosystem in Zafra - Río Bodi6n benefits companies equally. The only significant difference was found in the age of the companies, with younger companies benefiting more from the ecosystem than older ones. This indicates that the ecosystem is successful in generating new companies, but may not provide enough support for more mature ones.

DISCUSSION AND CONCLUSION

This work has aimed to examine the meaning of rural entrepreneurship, to determine what key aspects define and differentiate it from entrepreneurship in non-rural areas, and to know whether the local entrepreneurial ecosystem is aware of the own characteristics of rural ventures fostering their development. For that purposes, this work has incorporated a novel approach by combining the analysis of the characteristics of rural entrepreneurship and the influence of the entrepreneurial ecosystem. Based on the analysis of the academic literature, we conclude that the characteristics of rural entrepreneurship are the following: (i) Resource Utilization: Rural entrepreneurs often leverage local resources such as agriculture, natural landscapes, and traditional skills to start and sustain their businesses. (ii) Community Focus: Rural entrepreneurs may have a strong sense of community and may tailor their businesses to meet local needs. They might engage in community-oriented projects and contribute to local development. (iii) Challenges: Rural entrepreneurs may face unique challenges, such as limited access to markets, infrastructure, and financial resources. Overcoming these challenges often requires creativity and adaptability. (iv) Employment: Rural entrepreneurs involve the local community in their projects, leading to employment opportunities.

Many companies in the region studied are not aware of the differences between a rural enterprise and other types of enterprises. They are perceived as rural solely based on their geographical location in the rural environment, without any other parameters. This may be due to the fact that they are located in Extremadura, which is traditionally considered an eminently rural environment. However, it has been shown that the location in a rural environment and engaging in primary sector activities are not sufficient variables to measure the rurality of an enterprise. It leads to confusion when considering businesses located in small rural municipalities and/or focused on primary sector activities as purely rural companies.

Based on the analysis of the data, it was found that the companies located in the Zafra Río Bodi6n region exhibit some level of rurality. However, they are not completely rural, even though the region they are situated in could be characterized as such.

The connection a company has to its territory plays a significant role in determining its level of rurality. This connection includes emotional ties and a sense of rootedness. Interestingly, a company’s purpose and focus on creating wealth in the region also influence its level of rurality. This is evident in the fact that rural companies tend to generate more employment opportunities in their region. However, it’s important to note that a company’s geographical location alone doesn’t determine its level of rurality. Other factors must also be considered.

Rural entrepreneurship can be seen as part of the fourth sector, where the goal is to contribute to the development of the community beyond just making money, according to Sánchez-Hernández et al. (2021). This type of enterprise is focused on the local area and aims to have a positive impact on both the social and economic aspects of the community. It is important to recognize that rural entrepreneurship is a development model that arises from within the community itself, and it complements external development models. In today’s globalized society, it is crucial to appreciate the significance

of rural entrepreneurship as a source of internal development for a community. The people who live in the area can take advantage of their local strengths and resources to enhance and rejuvenate their surroundings.

The region of Extremadura boasts a diverse entrepreneurial ecosystem that spans across all its regions. It comprises both public and private agents, covering the domains of Isenberg (2011), creating an environment that fosters entrepreneurship. However, there appears to be a disconnect with the business community, which can be solid at the start of a company's establishment but tends to break down as the business grows. This could be due to a lack of resources to support the growth or innovation of more experienced companies.

Although the setting is rural, the current ecosystem for promoting entrepreneurship is not tailored to the specific needs and resources unique to rural areas. The ecosystem treats all businesses, regardless of their location, in the same way, and provides the same resources. This overlooks the importance of understanding the differences between rural and non-rural businesses and the value that rural areas bring to business development. Although these resources can ensure the success and profitability of new businesses, it is possible that they are not being used optimally for community or territorial development. It is important to recognize the importance of rooting in rural areas and creating value for the local community when developing new business initiatives.

Based on the analysis of several companies, it seems that the entrepreneurial ecosystem has a greater impact on new companies than on established ones. This impact remains the same regardless of factors such as gender, economic sector, location, or income level. The age of the company seems to be the only variable affected by the ecosystem, being more beneficial for young companies and less favorable for older ones. These findings raise concerns about whether the business ecosystem is truly aware of the needs and circumstances of the region's business community for its long-term sustainability. It is not clear if the current resources are aligned with the socioeconomic reality of the area. The existing resources provided by the entrepreneurial ecosystem are not specific to rural companies since they do not affect the perception of companies as rural, the geographical criteria of rural municipalities, or the activity sectors of business initiatives. Therefore, the use of the term rural in entrepreneurship programs and measures would not be an effective reference to the description of rural entrepreneurship proposed in this research.

As a final conclusion, in order to fully understand rural entrepreneurship, it is important to consider the connection between the people who start a business initiative and the area in which they are located. This goes beyond the specific industry or the size of the rural community. Our research has shown that a sense of connection and belonging to the community is a crucial factor in the success of rural businesses, even when the region's socioeconomic conditions may not be ideal for viability.

It's important to assess the usefulness and impact of business ecosystem resources and allocate some of those resources to identifying and promoting authentic rural enterprises. The use of specific resources cannot be generalized for both rural and non-rural enterprises because their missions are different. This is especially important to promote and distinguish rural enterprises.

The research conducted has some limitations due to the size and scope of the sample. The sample size is relatively small, with only 89 companies being studied, which is not representative of all the companies in the region (5,785). Additionally, the research was conducted only in certain municipalities of the region under study and hence cannot be generalized to represent the entire region. However, the results of the study can be used to test the proposed hypotheses in other regions as well. For future research, it is planned to use a larger and more representative sample from other areas of the Extremadura region. We propose to further investigate each of the factors that constitute the global indicator, using RURAL as a measure to determine the extent of rurality of companies operating in rural areas. We will conduct a case analysis to identify and consolidate the unique characteristics that define rural entrepreneurship and expand our research to other rural regions in the Extremadura area. This approach will help us not only to reinforce the model but also to measure the level of rurality of various rural zones within the same region. We will analyze the factors that have the most significant influence, based on the area under consideration.

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Appendix

Questionnaire used in the research

1. Gender:

Male	Female
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2. Location of the venture:

3. What town are you originally from?

4. Age (business):

< 2 years old	2-5 years old	5-10 years old	> 10 years old
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5. Economic sector:

Agriculture and livestock sector	Industrial sector	Construction sector	People services sector	Business services sector	Other
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6. Do you consider your business to be a rural business (perception of rurality)?

Yes	No
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7. Indicate the (main) reason why you decided to create your venture:

8. To what extent has creating value and contributing to the socioeconomic development of your local community been a factor in your decision to start a business?

Not important	Less important	Neutral	Important	Very important
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9. To what extent did your ties and roots with your local community influence the start of your business?

Not important	Less important	Neutral	Important	Very important
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10. Could you say that a high percentage of your customers are from your local community?

Totally disagree	In disagreement	Neutral	In agreement	Totally agree
------------------	-----------------	---------	--------------	---------------

11. Could you say that a high percentage of your providers and supports are from your local community?

Totally disagree	In disagreement	Neutral	In agreement	Totally agree
------------------	-----------------	---------	--------------	---------------

12. Could you say that the resources of the place you use (tangible such as raw materials or intangible such as the landscape) are essential to develop your activity, and that it could not move forward without them?

Totally disagree	In disagreement	Neutral	In agreement	Totally agree
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13. Do you think your business would do well if you moved to an urban location?

Totally disagree	In disagreement	Neutral	In agreement	Totally agree
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14. Do you have any employees on your work team?

Yes	No
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15. If you have employees where do those people come from?

All people are from outside the region	More than 50% of the people are not from the region	50% is from the region and 50% is from outside the region	More than 50% of the people are from the region	All people are the region
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16. Do you think there are sufficient public policies and measures to support small and medium-sized businesses in your local community?

Totally disagree	In disagreement	Neutral	In agreement	Totally agree
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17. Compared to other companies in your municipality or region, to what extent have these policies driven your business from the beginning to today?

Nothing	Bit	Something	Quite	A lot
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18. Do you consider that the entrepreneurial ecosystem favors the emergence of new ventures in your local community?

Totally disagree	In disagreement	Neutral	In agreement	Totally agree
------------------	-----------------	---------	--------------	---------------

19. Compared to other companies in your municipality or region, to what extent has the entrepreneurial ecosystem favored your business to date?

Nothing	Bit	Something	Quite	A lot
---------	-----	-----------	-------	-------

20. Do you consider that there are sufficient financial resources (aid, credits, bonuses...) to support the creation and consolidation of small and medium-sized businesses in your local community?

Totally disagree	In disagreement	Neutral	In agreement	Totally agree
------------------	-----------------	---------	--------------	---------------

21. Comparing your company with other companies in the municipality or region, to what extent has your business used, or does it use, these resources to boost its activity to this day?

Nothing	Bit	Something	Quite	A lot
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22. Do you consider that the market layout (customers, suppliers, local community...) in your region favors the creation of new small and medium-sized businesses, and consolidates existing ones?

Totally disagree	In disagreement	Neutral	In agreement	Totally agree
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23. Making a comparison with other companies in your municipality or region, to what extent has the market in your region favored your business to date?

Nothing	Bit	Something	Quite	A lot
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24. Do you consider that entrepreneurial values and culture exist in your local community?

Totally disagree	In disagreement	Neutral	In agreement	Totally agree
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25. En comparación con otros/as empresarios/as de su municipio o región, ¿hasta qué punto considera usted que cuenta con valores y cultura emprendedora?

Nothing	Bit	Something	Quite	A lot
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26. Do you think there is enough public and private support (incubators, consultancies, business groups...) in your local community to start a business and/or consolidate a business in operation?

Totally disagree	In disagreement	Neutral	In agreement	Totally agree
------------------	-----------------	---------	--------------	---------------

27. Regarding initial financing for starting your business, what type of financing did you use to create your company?

Own resources:

Less than 20%	20% - 40%	40% - 60%	60% - 80%	More than 80%
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External resources from financial entities in the region (bank loans):

Less than 20%	20% - 40%	40% - 60%	60% - 80%	More than 80%
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External resources from family, friends or others in the region:

Less than 20%	20% - 40%	40% - 60%	60% - 80%	More than 80%
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Municipal, regional or regional aid and/or subsidies:

Less than 20%	20% - 40%	40% - 60%	60% - 80%	More than 80%
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Other financial resources:

Less than 20%	20% - 40%	40% - 60%	60% - 80%	More than 80%
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28. Today, what is the approximate annual income of your business?

<€50,000	€50,000 and €150,000	€150,000 and €300,000	€300,000 and €500,000	>€500,000
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Biographical notes

Cristina Candelario-Moreno, MSc, Project Manager at Fundación Maimona, (Extremadura, Spain). Lecturer and a junior researcher specializing in entrepreneurship and rural development, with extensive professional experience in developing regional entrepreneurship and social innovation projects in Extremadura. Additionally, she advises entrepreneurs working in the rural sector. She is an approved lecturer by the Government of Extremadura and has participated in the expert panel of the Global Entrepreneurship Monitor of Extremadura for several years. Her research interests are focused on rural entrepreneurship and the entrepreneurial capacity of people in rural environments.

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Authorship contribution statement

Cristina Candelario-Moreno: Conceptualization, Data Curation, Investigation, Methodology, Resources, Supervision, Validation, Writing – Original Draft. **María Isabel Sánchez-Hernández**: Conceptualization, Formal Analysis, Investigation, Methodology, Resources, Supervision, Validation, Writing – Review & Editing.

Conflicts of interest

The authors declare no conflict of interest.

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