

# Female sustainability and startups: analysis of the leadership in communication by women entrepreneurs in Spain and Portugal

Sostenibilidad femenina y startups: análisis de la comunicación  
del liderazgo de mujeres emprendedoras en España y Portugal

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**ABSTRACT**

**Introduction:** Innovation in undertaking responsible and sustainable business models is currently at the top of the list of the European Union's priorities, in line with the Sustainable Development Goals set by the United Nations in its international Agenda expected to be reached by 2030. The creation and development of activities, projects, and companies aware of their impact on the planet in the short, medium, and long term, generate much more value when this leadership comes from a female entrepreneurial vocation, by enriching and optimizing the value of diversity in the management of resources, traditionally directed by the male ecosystem. **Methodology:** a methodological triangulation is applied through in-depth interviews with international key informants, analysis of digital contents in the regions of Andalusia (Spain) and Aveiro (Portugal), and the review of previous scientific literature. **Results:** The new Spanish-Portuguese *startups* are still mostly led by men, while the share of female entrepreneurial leadership represents 26.5% of the total sample. **Discussion:** although there is a wide range for improvement in presence and communication, women are increasing their entrepreneurial and innovative activity. In any case, co-responsibility with the community and care for the environmental legacy are still latent values for professional differentiation. **Conclusions:** The research highlights current international objective data on entrepreneurial corporate digital communication, providing a complete picture of the reality of women who are committing to business models whose mission, vision, and values are focused on sustainability.

**Keywords:** Innovation; Sustainability; Entrepreneurship; Stakeholders; Leadership; Communication; CSR.

**RESUMEN**

**Introducción:** la innovación para emprender modelos de negocios responsables y sostenibles es la máxima actual en la lista de prioridades de la Unión Europea, en consonancia con los Objetivos de Desarrollo Sostenible marcados por las Naciones Unidas en su Agenda internacional para el 2030. La creación y desarrollo de proyectos y empresas conscientes de su impacto en el planeta a corto, medio y largo plazo generan mucho más valor cuando este liderazgo proviene de una vocación empresarial femenina, al optimizar el valor de la diversidad en la gestión de los recursos, tradicionalmente dirigidos por el ecosistema masculino. **Metodología:** se aplica una triangulación metodológica con entrevistas en profundidad a informantes clave internacionales, análisis de contenidos digitales en las regiones de Andalucía (España) y Aveiro (Portugal) y la revisión de literatura científica previa. **Resultados:** las nuevas *startups* hispano lusas siguen siendo lideradas mayoritariamente por hombres, mientras que la cuota de liderazgo emprendedor femenino abarca en torno a un 26,5% del total de la muestra. **Discusión:** aunque exista un amplio rango de mejora en presencia y comunicación, las mujeres están incrementando su actividad emprendedora e innovadora. En todo caso, la co-responsabilidad con la comunidad y el cuidado del legado medioambiental son valores de diferenciación profesional aún latentes. **Conclusiones:** la investigación pone de manifiesto datos objetivos actuales internacionales referentes a la comunicación digital corporativa, que permiten ofrecer una visión completa sobre la realidad de las mujeres que están apostando por modelos de negocios cuya misión, visión y valores se centran en la sostenibilidad.

**Palabras clave:** Innovación; Sostenibilidad; Emprendimiento; *Stakeholders*; Liderazgo; Comunicación; RSC.

Translation by **Paula González** (Universidad Católica Andrés Bello, Venezuela)

## 1. Introduction

Stimulus programs for the creation of innovative companies aligned with the goals of the 2030 Agenda are one of the top priorities of the European Union in the current decade. In this sense, the articulation of projects and business activities based on models and co-responsible with the planet and the community, seem to acquire much more value when this entrepreneurship is born, created, promoted, and managed by vocationally entrepreneurial women.

In a finite world with limited resources, forward-looking companies are aware of the importance of investing strategically in the "circularity" of their processes, for the benefit of society, taking advantage of new technological advances (McKinsey, 2022) to extend the life cycle of products and promote the sustainability of the planet's resources.

### 1.1. Female leadership

The latest international studies on women's leadership in the business ecosystem show that women are generating, for the first time in history, higher levels of job change by demand and expressed desire, even surpassing men in the leadership of this movement of labor change. This break with the rules of the business game regarding women threatens to bring consequences for companies that fail to evolve in a significant and sustainable way towards gender equality (McKinsey, 2022, 13-15), through real values and actions oriented towards respect, equal opportunities, flexibility, wellbeing, diversity, equity, and inclusion.

Contemporary research on female leadership points out that women have a greater transformational style than men (García-Sánchez et al., 2019) when it comes to facilitating with greater optimism and enthusiasm motivation, respect, community bonding, problem-solving, communication of the company's values, purpose, and mission.

Startup ecosystems have the power to generate a positive impact on activity, the idiosyncrasies of product and service portfolios, and the economy as a whole, so the interest in emerging startups in both politics and academia is understandable (Kézai and Szombathelyi, 2021), even if this level of entrepreneurship has gaps or opportunities for improvement in terms of the proportion of female founders. In global terms, entrepreneurial ecosystems are not taking advantage of the potential of human capital in its female dimension (Berger and Kuckertz, 2016), which disfavors the spirit of growth and development, not only economically for the company but also for society (Audretsch, 2008).

The women's entrepreneurship movement began to be collected in scientific articles in the 1970s, highlighting that "entrepreneurship is a gendered phenomenon" (Jennings and Brush, 2013, p. 679). This perspective of inequality seems to be accused by the expectations from the business and family environment (Aldrich and Cliff, 2003), which impact conditioning the systems of norms, values, attitudes, and behaviors in and towards women with entrepreneurial desires. Thus, European countries such as Spain and Portugal continue to show very low rates of leadership intention in new autonomous businesses, even though they are more balanced than in other parts of the world (GEM, 2022).

To the extent that female-led entrepreneurship increases, it could contribute to a higher quality of entrepreneurial supply by creating greater diversity, not only by enriching the complementary gender presence, but also by increasing the approach perspective concerning "products, processes, organizational forms, and target markets" (Verheul et al., 2006, p. 152).

## 1.2. Innovative entrepreneurship towards the SDGs

Authors such as Kollmann and Kuckertz (2006) or Wiesenberg et al. (2020) speak of a "new economy" that has been emerging for the last two decades, with an increase in the number of start-ups. These authors identify as common features of this category the fact that they have: a) above-average economic performance; b) are at an early stage of development (less than ten years); c) have a high degree of innovation; and d) are scalable in terms of business volume and human resources..

These perspectives along with others such as that of Spigel (2017) consider that startups represent an important engine of economic growth for all countries and regions of the world, which implies a new culture of motivational stimulus coming from the social, political, economic, and cultural spheres to increase economic activity.

The Global Entrepreneurship Monitor (GEM, 2022, p. 71) defines entrepreneurship as the essential engine for society to achieve a state of well-being, health, and wealth; capable of addressing some of the world's greatest challenges and the Sustainable Development Goals (SDGs) contemplated in the United Nations 2030 Agenda.

Studies on the relationship between women and the environment have shown that women are more concerned about the ecological impact and present an ability to find local solutions and manage natural resources (Ahmad et al., 2021), presenting in general terms a greater ecological sensitivity and awareness. Accordingly, policies to stimulate entrepreneurship and economic incentive programs for the creation of environmentally sustainable enterprises led by women (Mertens et al. 2021) should facilitate the incorporation of these female leadership competencies and skills, given their important role in both research and innovative development in the preservation of the planet, in tune with the SDGs.

## 1.3. Responsibility and sustainable development

Of the numerous definitions on sustainability within the framework of social responsibility, the one offered by the World Bank stands out:

Corporate Social Responsibility is the commitment of companies to contribute to sustainable economic development by working with employees, their families, the local community, and society at large to improve the quality of life in a way that is good for business and good for development (Petkoski and Twose 2003, p.1).

But the concept of sustainability has been promoted for quite some time within international governmental bodies. In fact, the United Nations (1987) explicitly mentions sustainability as a key way to meet the needs of the present without endangering the resources available for future generations, in environmental, economic, and social terms.

For the 2021-2027 timeframe, the European Commission (2018) prioritizes the following objectives for all member and cooperating states: 1) smart and competitive entrepreneurship based on innovation, digitization, and circular economy; 2) a green economy free of carbon footprint; 3) a territory without mobility barriers, connected and safe; 4) ensuring human rights with special attention to those related to health and education; and 5) sustainable development in all territories, regardless of their size and location. To facilitate the achievement of these goals, economic stimuli are offered in the form of grants to promote businesses and impact projects, which are in turn self-sustainable in terms of their capacity for self-management of their own resources (Torres-Mancera, 2021) in the medium and long term.

## 1.4. Business communication in startups

When talking about brand communication to build a professional image and reputation, several strategies can be used to promote the reputation of the company depending on the moment of the company's life cycle (Petkova, 2012), the desire for positioning, the actual construction of the reputation, and the perceived image of the target audiences, interest groups, or stakeholders (Torres-Mancera and De las Heras-Pedrosa, 2018).

The business communication model developed by Invernizzi and Romenti (2015, p.224) outlines four key strategic aspects for effective management of tangible and intangible assets: the alignment of content and messages between the internal reality and the ecosystem, b) leadership, c) innovative vision, and d) effective communication of the differential value propositions of the entrepreneurial activity. The capacity, charisma, and personality of the founder(s) (Clark, 2008) also influence and affect the investment decisions of investors, as well as the customer's buying attitude.

### 1.4.1. Communicating for sustainability

An increasing number of companies are becoming aware of the importance of green or ecological measures (Reilly and Hynan, 2014), justice, and the economic development of communities. The United Nations Sustainable Development Report (2022) which measures the evolution of the 17 Sustainable Development Goals (SDGs) of the 2030 Agenda; puts the focus on science communication as a lever for the dissemination of objective knowledge with which to connect with social, environmental, and economic spheres, stressing the importance of taking care of the interface between science and politics.

Despite the large green movement in recent decades, there are few empirical studies on the weight and impact of attributes related to responsible and healthy practices when measuring consumer or user decision-making (Olson, 2013). However, according to Rogers' (1993) innovation diffusion theory, it would be feasible to predict the degree and speed of adoption and consumption of those innovative products and services, according to the advantages perceived by current and potential customers.

Companies oriented towards the social economy or "fourth sector" (European Commission, 2019) have the function and moral duty, in terms of co-responsibility, to promote communications to citizens and stakeholders about: a) advances in research, b) knowledge transfer, c) intelligent and conscious management of resources, and d) the value of talent and committed business leadership. We, therefore, speak of a new concept of "sustainability communication (SC)" (Golob et al., 2022): understood as a global social process based on the circular accumulation of inputs and dialogues for a more ecological, economic, and community life (Ziemann, 2011, p. 92) between different social systems (Godemann and Michelsen, 2011).

### 1.4.2. Communication and social innovation

One of the main premises of knowledge transfer, especially concerning innovative advances for the benefit of society, is proactivity in the communication of science, whether it originates from academia or from the business environment.

New business models are focusing on hybrid-profitable models (Dionisio and de Vargas, 2020) capable of innovating and positively influencing sustainability and social change, creating value in a shared way, improving reputation, strengthening competitive advantages, and responding to the demand of all stakeholders. Within this context, the social change narrative is presented as a highly relevant communicative process, which requires putting social innovation into action through a strategic

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approach with clear and attractive initiatives (Wittmayer et al., 2019). Thus, the activities of the emerging fourth sector in which business purposes are combined with social and environmental ones require efficient work to communicate the innovative character (Sánchez-Hernández et al., 2021) and the objective impact on the community. The communication of the mission, vision, and values of the startup or new generation company nurtures in a bidirectional way the purpose of knowledge transfer, by fostering the innovative capacity consciously within the organization, besides increasing its potential and value (Ganguly et al., 2019).

According to the approach to science communication offered by Matta (2020), which highlights its impact on the relationship between governments, professionals, and users when it comes to favoring positive attitudinal change, the communication of social innovation could similarly stimulate the solution to social and environmental problems, re-educating production and consumption habits. These authors emphasize the importance of effective communication through the cooperation of key people and agents who put scientific solutions into practice at the local level in the first instance. In this way, dissemination and echo, especially thanks to digital environments, could elevate the R+D+i of startups from local to global, as a case of success and good practices.

## 2. Objectives

The main objective of this research is to explore the state of female leadership when it comes to directing projects that have as a banner the work for a sustainable world, in two countries that are geographically and historically twinned: Spain and Portugal. This activity is measured by identifying and analyzing the cyber communication of responsible entrepreneurial leadership. The study of possible correlations between the activity of startup businesses, the leadership of their creators, especially when they are women, actions focused on sustainability, the inclusion of innovation as a differential value of startups, and their communication in digital environments, is established as a specific objective. The following starting hypotheses are established:

H1: New business models are aligned with the purposes of circular economy and sustainability promoted by bodies such as the European Union and the United Nations.

H2: Startups value their respect for the environment as a differentiating element and as an element of proximity to the different stakeholders.

H3: Despite communication and awareness efforts for the empowerment of women in the business environment, there is a professional gender gap.

## 3. Methodology

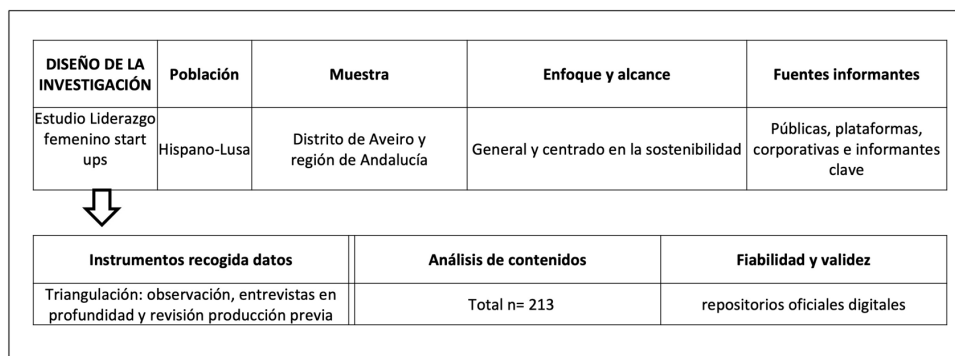
The parameterization of the object of study is materialized through the selection of two samples, one per country. To this end, we analyze the startups that are committed to adding differential value in two regions that are highly representative for their high economic activity in their respective countries: the regions of Andalusia and Aveiro.

The Aveiro district region is one of the largest in the Portuguese country at an economic level (Instituto Nacional de Estatística de Portugal, 2022), offering an outstanding level of quality of life and income and standing out not only for its tourist attraction but also for its university and its high degree of industrialization. In fact, 55% of the active population is dedicated to this sector. With a surface area of 2,798 km<sup>2</sup>, it has a total population of 714,200 inhabitants, which indicates a population density of 255.2 inhabitants/km<sup>2</sup>. The region of Andalusia, although different in size, with an area of 87,599 km<sup>2</sup> and a census of 8,476,718 inhabitants (Instituto de Estadística y Cartografía de Andalucía, 2022), has a density of 96.63 inhabitants/km<sup>2</sup>, which implies a lower population concentration ratio than Aveiro.

The research is structured according to the ad hoc design of a methodological triangulation based on 1) in-depth interviews with key informants in both regions, 2) the digital analysis of corporate content in a digital format related to the innovation and sustainability of startups in Spain and Portugal, and 3) the analysis of international scientific production before this study, as well as official reports from relevant international organizations. Such triangulation aims to bring rigor to the study, through the conciliatory linking of quantitative and qualitative epistemologies (Denzin, 2007).

To offer a methodological approach that is both quantitative and qualitative (see Figure 1), the first step is to compile a collection of research on the subject, establishing a comparative international temporal analysis. Simultaneously, the reality of female leadership in the regions is explored, paying special attention to the difference in corporate digital presence compared to male leadership. For this purpose, the startups that make up the official censuses of public institutions in both countries, located through their incubation and acceleration programs of these new business models (Junta de Andalucía, 2022; Global Entrepreneurship Monitor de Andalucía, 2021; Jornal de Notícias, 2022; StarupBlink, 2022; Universidade De Aveiro, 2022), are chosen as a sample.

**Figure 1:** *Methodological architecture for the study.*



**Source:** Own elaboration.

At a qualitative level, precise expert information is extracted from members of European Erasmus + projects of the Universities of Malaga and Aveiro, focused on companies with a sustainable impact on the community and the environment. Specifically, interviews are conducted in a face-to-face format with the national and international coordinators and partners of the projects Fair Food for a Smart Life, and CARE (Consumer Awareness for Responsibility towards Environment).

The quantitative study identifies the roles of directors, founders, or CEOs (Chief Executive Officers) of women entrepreneurs in global terms and by sector of professional activity, initiated in the period between 2020 and October 1st, 2022. From the official platform "Andalucía Conectada" (Junta de Andalucía, 2022) and the directories available online about the entrepreneurial movement in Aveiro (Jornal de Notícias, 2022; StarupBlink, 2022; Universidade De Aveiro, 2022), the lists of startups identified with transparency and name are extracted, making up a total of n=75 in the Aveiro region and 138 in the Andalusia region. From these data, the corporate communication about their start-up activity is explored.

For this data quantification, the content analysis technique is applied to generate objective, relevant, homogeneous, and systematized information (De Sola and Berelson, 1952; Stemler, 2001) of the

communications in their digital formats. Based on the results of the in-depth interviews with key informants, for the total of the 213 companies that make up the Spanish-Portuguese sample, 12 categorical routes are established (see Table 1) for the key concepts of female leadership, innovation, sustainability, responsibility, inclusiveness, recycling, green and/or blue circular economy. Based on these criteria, we proceeded to a detailed study of the corporate documentary supports directly related to the samples that meet the condition of startup of public knowledge in each region.

**Table 1:** *Methodological architecture for the study.*

ANÁLISIS DE CONTENIDOS	Palabras clave*	Acotación temporal	Soporte documental
Estudio: empresas de nueva creación en España y Portugal. Regiones de Andalucía y Aveiro.	<ul style="list-style-type: none"> <li>▶ "Start Up/Emprendimiento"</li> <li>"CEO/Gerente/Directora"</li> <li>"Líder/Liderazgo"; "femenino/mujer"</li> <li>"sostenible/sostenibilidad"</li> <li>"responsabilidad/responsable"</li> <li>"deshecho/residuos/reciclar"</li> <li>"innova(ción/ar)"</li> <li>"circular"</li> <li>"inclusivo"</li> <li>"verde/ecológico"; "azul"</li> </ul>	2020-2022	<ul style="list-style-type: none"> <li>▶ Gobiernos regionales</li> <li>▶ Incubadoras</li> <li>▶ Aceleradoras</li> <li>▶ Universidades</li> <li>▶ Web corporativas</li> </ul>

**Source:** Own elaboration.

#### 4. Results

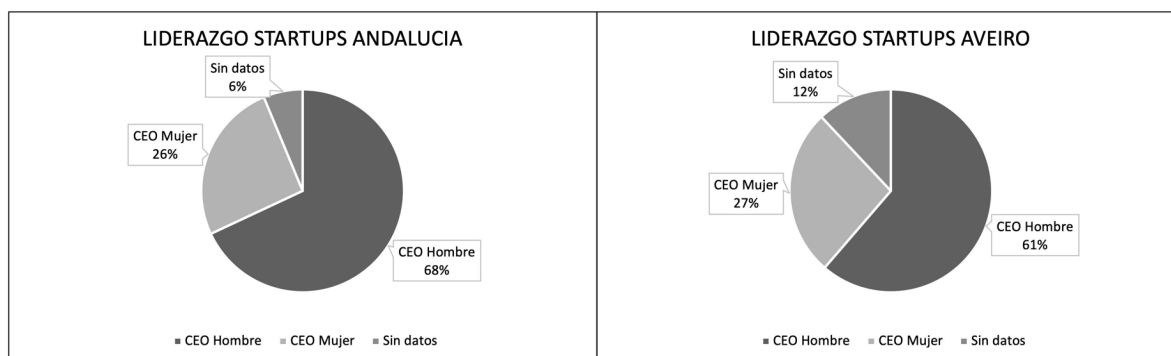
In global terms, bearing in mind the recent economic crises and the impact of the global confinement by COVID-19, entrepreneurship shows an appreciable dynamism, with a volume of activity in the incubators and accelerators of Andalusia and Aveiro of 138 and 75 respectively, although in absolute terms the official censuses speak of more than 17. 000 start-ups in Andalusia (Global Entrepreneurship Monitor of Andalusia, 2021) and an undefined figure in Aveiro, although at the national level, the figure is reported to be 154,287 in the whole of Portugal in 2020 (Instituto Nacional de Estatística de Portugal, 2022). The preferred sectors for starting the activity of the analyzed startups are similar, although with some slight variations.

Entrepreneurial leadership in both regions analyzed continues to be primarily male-dominated, with a very appreciable difference compared to female proactivity when it comes to creating and managing companies. Thus, the data reveal that 26% of the Andalusian sample of 138 startups is made up of female creators, founders, and/or CEOs; and in the case of Aveiro, this profile covers 27% of the 75 entities analyzed (see Figure 2).

In the case study of Andalusia, the following order of preferences of sectors of activity (see Table 2), in gross terms, on which the business models devised by the startups are focused is identified: 1) Technology with a 17% share, agri-food with 14%, and health with 13%. Concerning the activities in which Andalusian women entrepreneurs, in net terms, stand out, are the sectors of animal care (50%), graphic design (40%), and education (38%).



**Figure 2:** Gender distribution of entrepreneurial leadership in Andalusia and Aveiro.



Source: Own elaboration.

**Table 2:** Main startup sectors and the proportional ratio of female managers in Andalusian startups.

STARTUPS ANDALUCÍA	ACTIVIDAD	RATIO CEOS MUJERES
AGROALIMENTACIÓN	14%	27%
ANIMALES	1%	50%
ARTE Y ESPECTÁCULO	3%	25%
AUTOMOCIÓN	1%	0%
FINANZAS	2%	33%
DEPORTES	3%	0%
DISEÑO	2%	40%
ENERGÍA	3%	50%
ESTETICA	1%	0%
FORMACIÓN	9%	38%
GAMIFICACIÓN	4%	25%
PUBLICIDAD	1%	0%
SALUD	13%	33%
SERVICIOS RRHH	3%	0%
TECNOLOGÍA	17%	13%
TRANSPORTE	4%	25%
TURISMO	9%	23%
VIVIENDAS	2%	0%
OTROS	8%	38%

Source: Own elaboration.

The Aveiro district concentrates the largest number of startups (see Table 3) in the technology (33%), health and private assistance (11%), and agri-food (8%) sectors. Portuguese female entrepreneurs are in the majority, in net terms, in the following business lines: architectural design (100%), private healthcare (63%), and content gamification (50%).

The degree of communication of Spanish-Portuguese startups is another key factor studied in the research. Accordingly, the digital positioning of the entities that make up the samples is first measured through official websites. The presence or absence of leadership in general terms, and female leadership in particular, is tested through content analysis.

**Table 3:** *Ain sectors of business start-ups and the proportional ratio of female entrepreneurial managers in Aveiro.*

STARTUPS AVEIRO	ACTIVIDAD	RATIO CEOS MUJERES
AGROALIMENTARIO	8%	33%
ARQUITECTURA	5%	100%
COMUNICACIÓN	7%	20%
CONSULTORÍA	4%	0%
ECONOMÍA AZUL	5%	25%
ENERGÍA MEDIOAMBIENTE	1%	0%
GAMIFICACIÓN	3%	50%
PUBLICIDAD	4%	0%
SALUD	11%	63%
SERVICIOS RRHH	5%	0%
TECNOLOGÍA	33%	15%
TURISMO	7%	25%
OTROS	7%	60%

**Source:** Own elaboration.

In Andalusia, a total of 20 mentions were collected from the  $\Sigma n=138$  companies analyzed (see Table 4), and in proportion, together with female leadership, this is only explicitly included in 23% of the mentions. Of the remaining keywords detailed in section 4 on the methodological design, the following stand out in order of entrepreneurs' preferences: "innovation" (23%), "sustainability" (21%) "leadership" (12%), "circular" (11%), and "recycle" (10%).

**Table 4:** Analysis of digital content related to Andalusian responsible innovative entrepreneurship aligned with the 2030 Agenda.

STARTUPS ANDALUCÍA	"Liderazgo"	"femenino/mujer"	"sostenible/sostenibilidad"	"responsabilidad/responsable"	"deshecho/residuos/reciclar"	"innovación/ar"	"verde/ecológico"	"circular"	"inclusivo"	"azul"	TOTAL
AGROALIMENTACIÓN	2	0	7	1	1	5	3	4	0	0	23
ANIMALES	0	0	0	0	0	0	0	0	0	0	0
ARTE Y ESPECTACULO	0	0	0	0	0	1	0	0	0	0	1
AUTOMOCIÓN	0	0	0	0	0	2	0	0	0	0	2
FINANZAS	5	0	0	8	0	0	0	0	0	0	13
DEPORTES	0	0	0	0	0	2	0	0	0	0	2
DISEÑO	0	0	0	0	0	0	0	0	0	0	0
ENERGIA	0	0	0	0	0	0	0	0	0	0	0
ESTÉTICA	0	0	0	0	0	0	0	0	0	0	0
FORMACIÓN	0	1	0	1	2	1	0	0	0	0	5
GAMIFICACIÓN	0	0	0	0	0	0	0	0	0	0	0
PUBLICIDAD	0	0	0	1	0	2	1	0	0	0	4
SALUD	3	3	3	0	0	3	0	0	0	0	12
SERVICIOS RRHH	2	0	0	1	0	2	0	0	0	0	5
TECNOLOGÍA	2	0	8	4	0	11	0	0	0	0	25
TRANSPORTE	0	2	3	0	0	0	0	0	0	0	5
TURISMO	3	0	4	0	0	2	0	1	1	0	11
VIVIENDAS	0	0	0	0	0	2	0	0	0	0	2
OTROS	3	0	11	7	13	5	0	14	1	0	54
TOTAL TAGS	20	6	36	23	16	38	4	19	2	0	164

Source: Own elaboration.

From the analysis of digital corporate communications issued by the 75 Portuguese startups (see Table 5), only 7.5% place value on their leadership skills, and of these, only 20% share with stakeholders that this leadership is originated or intended for women. The keywords favored by the current entrepreneurial movement in Aveiro are "innovation" (49%), "sustainability" (21%), "responsibility" (9%), "ecological" (6%), and "blue" (4%).

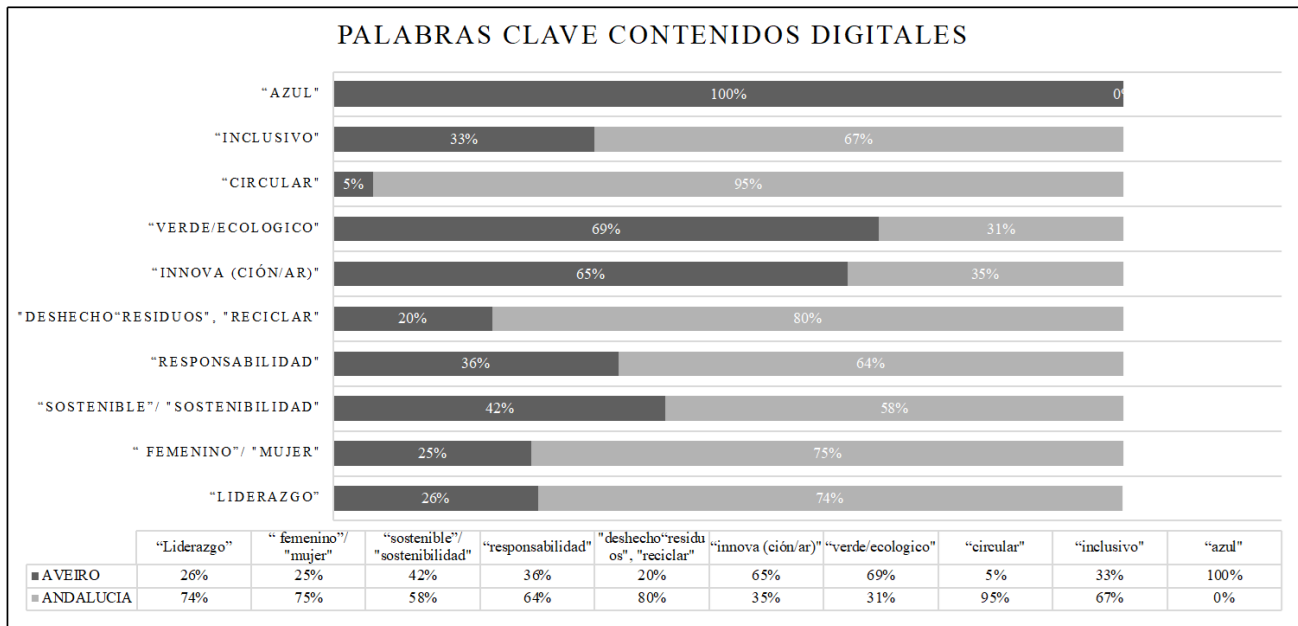
**Table 5:** Digital communication of concepts related to responsible innovative entrepreneurship in Aveiro aligned with the SDGs.

STARTUPS AVEIRO	"Liderazgo"	"femenino/mujer"	"sostenible/sostenibilidad"	"responsabilidad/responsable"	"deshecho/residuos/reciclar"	"innovación/ar"	"verde/ecológico"	"circular"	"inclusivo"	"azul"	TOTAL
AGROALIMENTARIO	1	0	3	1	1	1	0	1	0	4	12
ARQUITECTURA	0	0	4	0	0	0	0	0	0	0	4
COMUNICACIÓN	0	0	1	0	0	4	0	0	0	0	5
CONSULTORÍA	0	0	0	2	0	3	0	0	0	0	5
ECONOMÍA AZUL	0	0	5	1	1	5	0	0	0	2	14
ENERGÍA MEDIOAMBIENTE	0	0	0	0	0	0	0	0	0	0	0
GAMIFICACIÓN	0	0	2	0	2	0	3	0	0	0	7
PUBLICIDAD	1	0	1	1	0	0	1	0	0	0	4
SALUD	0	1	0	0	0	10	1	0	0	0	12
SERVICIOS RRHH	0	0	0	0	0	0	0	0	0	0	0
TECNOLOGÍA	6	0	15	6	0	45	4	0	0	0	76
TURISMO	0	0	0	0	0	0	0	0	1	0	1
OTROS	0	1	0	2	0	3	0	0	0	0	6
TOTAL TAGS	8	2	31	13	4	71	9	1	1	0	146

Source: Own elaboration.

In absolute percentage terms (see Figure 3), Andalusian startups are positioned as leaders in digital communications referring to a circular economy (95%), recycling (80%), female leadership (75%), the inclusion of people (67%), responsibility (64%), and sustainability (58%). From the Portuguese entrepreneurial perspective, Aveiro startups lead the approach towards the blue economy (100%), ecology (69%), innovation (65%), and sustainability (42%).

**Figure 3:** Analysis of digital communication on sustainability and female entrepreneurial leadership.



Source: Own elaboration.

Going deeper into the analysis of the communication of the leadership of women entrepreneurs in Spain and Portugal, we jointly study female entrepreneurship in Andalusia and Aveiro (Figure 2) and the official digital content on the value propositions of startups in terms of sustainable innovation and proactivity in these social and environmental business models (Figure 3).

Of all the Portuguese women entrepreneurs identified in the study, 90% professionally communicate their activity through an official website under their business name, highlighting in 50% of the cases the innovative nature of their business model. However, only 15% highlight their leadership skills and only 10% highlight the fact that it is created and managed by a woman. In the case of the CEOs of the Spanish startups in the Andalusian sample, 86% officially communicate about their company in the form of their own commercial website, only 11% highlight the innovative nature of their activity for society and/or the environment, and only 5% emphasize the female leadership in their business.

In absolute terms, of the total sample of Hispanic-Portuguese women leaders, 88% have their own website to communicate the business model of the startup they have created and/or manage, 25% highlight social and/or environmental innovation as a competitive advantage, 9% mention leadership among their attributes of value, and 7% share the differential fact that it is a company led by a woman entrepreneur.

## 5. Discussion and Conclusions

The data extracted from the gender analysis of female leadership in the Hispanic-Portuguese entrepreneurial environment coincide and are in agreement and alignment with those previously extracted by more generic reports such as those of the Global Entrepreneurship Monitor of Andalusia (2021) and the Global Entrepreneurship Monitor (2022). In all cases, it can be seen that, although there is still a wide range of improvement for the parity ratio in European female leadership, women are increasing their entrepreneurial and innovative roles.

Although some authors define "startup" as any innovative company created in the last 10 years (Kollmann et al., 2016; Spigel, 2017; Wiesenberget al., 2020) the concept of startups, at least in the European environment, assumes a shorter period of activity to be contemplated as such, that is 5 years, as indicated in the new Spanish draft law on startups (El País, 2022). And although it is desirable that they present a high degree of innovation, in the case of Aveiro, only half of them give it value in their corporate communication tools through their official websites. In the case of Andalusia, the percentage is even lower. In any case, the most communicated keywords in the study are: 1) "innovation", 2) "sustainable", and 3) "waste/recycle".

In synthesized terms, the initial questions are resolved, with the following answers corroborated by the survey data:

R1: Regarding sustainability, a moderate percentage (21%) of startups communicate their alignment with this approach, with the presence of circular economy premises also being residual and minimal in cyber-communication formats.

R2: Concerning leadership, most of the Spanish-Portuguese startups do not currently value their ecological vision and proactivity, as a differentiating element of commitment to the environment and the community.

R3: Female entrepreneurship shows a clear gender gap compared to men, with the female professional facet being identified in about 25% of the total of each sample. In any case, there are no relevant efforts to share or champion the role of female leaders in the corporate communications of startups.

The preferred sectors for the entrepreneurial movement throughout the Iberian Peninsula are: 1) technology, 2) health, 3) agri-food, and 4) tourism. The linking of businesses to the circular economy is very present in Andalusia, while the conscious leadership for the blue economy stands out as a market niche in Aveiro.

There is a wide margin for improvement in digital communication capabilities, which would result in the positioning and visibility of the startups. A great opportunity for differentiation of these startups is therefore identified if they work their corporate identity linked to concepts related to the SDGs, CSR, and circular economy for a state of well-being of stakeholders in the present and future.

To give continuity and expand the potential of the line of work opened with this research, the possibility of expanding the methodological design with other parameters and tools such as direct interviews with the women who lead the companies identified, as well as the analysis of the evolution of the new startups over time, can be considered. In this way, it will be possible to delve into the motivational factors, latent strengths, and limitations they wish to overcome to convert their ideal of sustainable business into a real socioeconomic and environmental legacy.

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