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IO1 National Report Spain

Prepared by Blue Room Innovation

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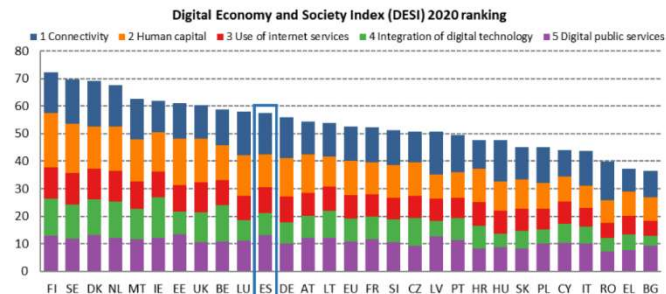


1. Introduction

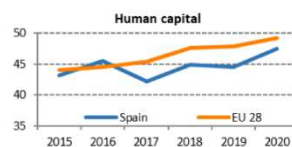
General situation Spain

Spain ranks out 11th of 28 EU Member States in the 2020 edition of the Digital Economy and Society Index (DESI)¹ based on data prior to the pandemic. Spain ranks 2nd in the EU on digital public services thanks to its well-timed implementation of a digital-by-default strategy throughout its central public administration. The country performs well also in the area of connectivity. Spain is below the EU average on the human capital indicators. Though it is improving its scores, almost half of the **Spanish population still lack basic digital skills and 8% have never used the internet.**

	Spain		EU
	rank	score	score
DESI 2020	11	57.5	52.6
DESI 2019	10	53.6	49.4
DESI 2018	10	50.2	46.5



2 Human capital	Spain		EU
	rank	score	score
DESI 2020	16	47.6	49.3
DESI 2019	17	44.5	47.9
DESI 2018	17	44.9	47.6



43% of people between 16 and 74 years of age lack basic digital skills (against the EU average of 42%). The share of ICT specialists in total employment increased and it is now close to the EU average (3.2% against EU average of 3.9%). The share of ICT graduates in Spain also increased and now accounts for 4% of all graduates. The share of female ICT specialists remains stagnant at a mere 1.1% of total female employment.

	Spain			EU
	DESI 2018	DESI 2019	DESI 2020	DESI 2020
	value	value	value	value
2a1 At least basic digital skills	55%	55%	57%	58%
% individuals	2017	2017	2019	2019
2a2 Above basic digital skills	32%	32%	36%	33%
% individuals	2017	2017	2019	2019
2a3 At least basic software skills	58%	58%	59%	61%
% individuals	2017	2017	2019	2019
2b1 ICT specialists	3.0%	2.9%	3.2%	3.9%
% total employment	2016	2017	2018	2018
2b2 Female ICT specialists	1.0%	1.0%	1.1%	1.4%
% female employment	2016	2017	2018	2018
2b3 ICT graduates	4.0%	3.9%	4.0%	3.6%
% graduates	2015	2016	2017	2017

Political framework

The advanced skills are required to be able to perform a more elaborate activity, such as publishing content, doing sophisticated searches, or programming and configuring simple digital systems. In the case of the workforce, specific digital skills related to the work performed are also necessary, such as handling complex digital tools. In this area, according to estimates by the European Commission, at least 90% of jobs already require basic digital skills. However, in Spain, in 2019, **36% of the workforce lacked these skills, the situation being worse among the unemployed population (55%) than that of the employed (32%).** The governmental strategy Spain Digital 2025² will prioritize closing the digital skills gap between employed and unemployed people to mitigate the chronification of unemployment situations and allow continuous requalification throughout the working life, paying special attention to the **existing digital gap in areas of low population density and in the rural world.**

Detailed analysis of the relevant project target groups in Spain

Women entrepreneurs

"The gap between male and female entrepreneurs has been steadily narrowing since 2013," says the Global Entrepreneurship Monitor (GEM) report on entrepreneurship. The figures are increasingly comparable, as, in Spain, 45% of the entrepreneurial population is already made up of women, more than 650,000 women

¹ <https://digital-strategy.ec.europa.eu/en/library/digital-economy-and-society-index-desi-2020>

² https://portal.mineco.gob.es/es-es/ministerio/estrategias/Paginas/00_Espana_Digital_2025.aspx



entrepreneurs. The Spanish entrepreneurial woman is between 25 and 34 years old, and has university studies. 70% of these women undertake due to market requirements, while 25.1% do so out of necessity.

Startups led by women

The international surveys indicate that women, immigrants, youth and seniors are greatly under-represented among digital entrepreneurs in the EU. It is estimated that **women accounted for only 15.6% of digital start-ups** in 2018, which was essentially unchanged from 2016 (14.8%). This is well below their share among entrepreneurs. It means that for every 10 male entrepreneurs in Spain there are 9 female entrepreneurs, the ratio in the total of the European Union being 6 women for every 10 men³.

According to South Summit⁴, 22% of **Spain's startups** are **run by women**. That places **Spain** above the US at 17% and the UK around 20%, but lagging behind some surprising world leaders in the market share of **women-led** businesses: such as Ghana at 46%, Uganda at 33% and Vietnam at 31%. **Only one in 10 Spanish entrepreneurs were previously unemployed**, and six out of 10 admit that they always wanted create a startup while 23% joined a startup project in which they believed in. **Only 18% of startups have a single founder** while 35% have two founders and 29% have been created by three entrepreneurs. Until now, **female digital startups in Spain have been one of opportunity and not of necessity**. The typical female digital startup is, almost by definition:

- A micro-business with less than 5 years of life.
- With between 0 and 4 people employed (70%). In fact, the vast majority do not exceed 10 (88.2%).
- Without a predominant sector.
- They do not reach a million euros in turnover (92%), an important part of them is below 100,000 euros (72%). The profile of women who undertake in the digital field in Spain is quite broad, although the higher concentration occurs under these characteristics:
- A woman between 35 and 45 years old, married or with a partner and without children.
- Highly qualified, with a university degree and a Master's or Doctorate.
- With professional experience, employed as an employee at the time of start-up, with at least 15 years of work experience.
- Having come to occupy a position of responsibility in the business world, as a middle manager or even in senior management.
- Feel that she has sufficient skills to undertake (82.6%) despite the lack of knowledge of business creation and management. It is possible to think that there is a set of skills apart from those related to the creation and management of companies that are considered important by female entrepreneurs and that they dominate better. Possibly it is technical knowledge on the one hand and soft skills on the other.
- They do not perceive that being women has been a barrier for them and that their role in the family has been a difficulty, although it is true that it is a sample of young women with few family responsibilities.
- Despite what is indicated in the previous point, some female entrepreneurs (44.1%) do acknowledge having decided to undertake to improve the reconciliation of family with personal and work life. Most have, however, to increase their independence. It is what they call the #motherfounders movement, entrepreneurial women mothers.

The biggest challenges for digital entrepreneurs are:

- Lack of funds at the beginning of your entrepreneurship process.
- A complicated legal framework.
- Incomplete knowledge of business creation and management.

³ <https://wstartup.com/es/inicio/>

⁴ <https://southsummit.co/en/home/>



YOUTH

According to the municipal census on January 1, 2017, the population of Spain was 46,572,132, of whom 14,040,091 were **under 30 years of age, which was 30.15%**. While the total population increased by 0.03% in the last year, the number of young people showed a negative inter-annual variation of 0.48%, that is, 68,306 fewer people. The probable causes of the reduction in the number of registered young people are that the younger population is not growing because the natural increase is negative. Furthermore, **the migratory balance, although positive in general terms, was not enough to compensate for the lower birth rates**. The total workforce aged 16 to 29 underwent an inter-annual variation of 1.06 points, although in the last five-year period it dropped by 11.09%, i.e., by 448,200 young people. **The employed population between the ages of 16 and 29 went up during the five-year period by 9.24 percent, or 217,900 people**. This figure was positive for the fourth year in a row.

The 2007-2014 period was marked by an international economic and financial recession that has had a considerable impact on the labour market in Spain, particularly affecting the young population. According to EUROSTAT data, **the youth unemployment rate in Spain (young people between 15 and 29 years old) rose by a factor of 3 between 2007 and 2012, reaching 40.3% by 2012, more than twice the EU-28 average (18.4%)**.

Employment stability was 8.19%, the lowest of all groups, although in the last decade there has been little oscillation among young people. Stable youth recruitment increased by 16.27% in the last year. The full-time rate was 56.48 % of contracts as opposed to 43.52 % part-time. **The human capital of the Spanish educational system is two-tiered**: it consists of either highly skilled (with high intellectual capital) or very low-skilled labour. There is a decided lack of basic vocational school graduates. This duality is reinforced by unequal access to information networks and opportunities in the education system that can facilitate quality employment.

Of the total **number of unemployed people, those under 30 years of age represent 28.1%** distributed as follows:

- 1) **The young people who have not finished their two years of compulsory secondary education is 45.44% of the total youth population**, a very high figure due to their difficulty in getting a job because of their low level of education and training.
- 2) It should also be taken into account the **high percentage of unemployment in Higher Education, both university and higher vocational education, at 25.95%**. This may be due to the difficulty in getting a job due to a lack of professional experience.

Youth & Entrepreneurship

The VII Young Business Talents Report⁵ reflects how in 2020 **the number of young people who show their desire to start their own project continued to increase**, ahead of those who want to be civil servants or work in a large company.

The profile of the young entrepreneur in Spain is around thirty years old and those under 25 years of age (Tuñón, 2019)⁶ opt for online businesses with a marked social character, mainly concentrated in the health and logistics sectors, however are in minority. The youngsters without certificated education or only primary and secondary school rarely see the entrepreneurship as an option to enter the labour Market.

Jauregui et al. (2016)⁷ confirm that there are three profiles of professional aspiration among Spanish students: entrepreneurs who want to create their own company (18.8%), work as self-employed (3.4%) or continue with the family business (1.2 %); officials (25.2%); and wage earners who aspire to work in an SME (11%), a large company (22.6%) or another type of work for others (3.3%). Following the study conclusions of these authors, **the student who aspires to undertake has an average of 24 years, studies**

⁵ <https://www.youngbusinesstalents.com/blog/informe-ybt-jovenes-espanoles/>

⁶ Tuñón, J. (2019). El emprendimiento juvenil en España. claves de un desafío pendiente. OBS Business School.

⁷ Jauregui, F., Carmona, L., Carrión, E. (2016) "Universidad y empleo, manual de Instrucciones". Almuzara y Ecuca2010, Madrid



and works, studies in private centers, has international experience and a good knowledge of foreign languages.

The level of youth entrepreneurship in Spain currently observed, although it shows moderate growth, is higher than the figures observed before the 2008 crisis. However, **entrepreneurship is the last option contemplated by those under 30 years of age in Spain.** Young self-employed in Spain represent 5.4% while, among salaried employees, they represent 13.6%. In addition, in the Labor Force Survey (EPA)⁸, a significant gender gap is observed, with 70.8% of men and 29.3% of women.

Entrepreneurship support in higher education has a longer history in Spain. In addition to providing entrepreneurship education and supporting new business start-ups, there are networking initiatives that aim to bring stakeholders together to promote entrepreneurship widely and strengthen the entrepreneurship culture in Spain. One such example is Start Up Spain⁹.

However, there is a **large group of young people who are not in training, education or employment but could benefit from starting a business.** The NEET population accounted for 17.1% of youth in 2015. Active labour market policies provide a route to support them with training, coaching and finance, but are not yet fully exploited (only 3% of ALMP expenditures in Spain are on new start-ups).

One of the **essential handicaps of Spanish youth entrepreneurship** lies in the fact that **the contribution of young companies in Spain to job creation is low.** Half of the young people only create jobs for the owner. A third of young entrepreneurs do not expect to create new jobs in the next five years, twice the Latin American average. The levels of innovation are in line with the Ibero-American average" (OIJ, 2018: 91)¹⁰. Finally, and in relation to the technological variable, **more than 70% of older youth do not use new technologies in their businesses. Despite the unflattering of the previous indicator, on the contrary, the outlook is more encouraging among young youth, since only half do not use any technology, while a fifth use the latest technology** (OIJ, 2018: 91).

National initiatives

In the area of supporting the acquisition of entrepreneurship skills, some of the key national initiatives include Junior Achievement Spain¹¹ and INCYDE¹², which provide entrepreneurship training and help youth develop entrepreneurial mindsets. In addition, a large number of non-governmental organisations also provide coaching and mentoring, business counselling and network development. Youth entrepreneurs in Spain can benefit from many youth entrepreneurship networks and associations, including large national networks such as the Emprende XL Social Network¹³ and CEAJE¹⁴. These networks are important for connecting youth entrepreneurs with each other and with other business support organisations. Other good practices of support are provided by: INJUVE¹⁵, App Emprendemos¹⁶, Youth Business Spain¹⁷ etc. In addition relevant to be mentioned are initiatives such as the Youth Guarantee¹⁸ and tools such as the "Live, Learn and Undertake" program of Action Against Hunger¹⁹, co-financed by the European Social Fund and the Incyde Foundation, or experimental programs such as 'Building employment' or 'Metalízate'²⁰ as plans to improve youth employability of the Aragonese Government and other private institutions and NGOs, facilitate the transition from studies to employment, reinforce the integration of youth, promoting their social insertion thanks to entrepreneurship.

⁸https://www.ine.es/dyngs/INEbase/en/operacion.htm?c=Estadistica_C&cid=1254736176918&menu=ultiDatos&idp=1254735976595

⁹<https://www.linkedin.com/company/start-up-spain/>

¹⁰https://issuu.com/segi/pdf/docs/baja_sur_sur2018_en_completo

¹¹<http://www.fundacionjaes.org/>

¹²<https://www.incyde.org/>

¹³www.emprendexl.com

¹⁴<http://www.ceaje.es/>

¹⁵<http://www.injuve.es/>

¹⁶<http://www.injuve.es/noticia/app-emprendemos>

¹⁷<https://www.youthbusiness.es/>

¹⁸<https://www.sepe.es/HomeSepe/Personas/encontrar-trabajo/Garantia-Juvenil.html>

¹⁹<https://www.accioncontraelhambre.org/es/que-hacemos/empleabilidad/encuentra-trabajo>

²⁰<https://confemetal.es/index.php?mid=niv67-con3675>



SMEs & self-employed

According to data as of 2019, provided by the Ministry of Labor, Migration and Social Security, the total number of companies in Spain was 2,884,795, of which 99.84% were SMEs. Statistical data relative to affiliated workers and self-employed workers as of 2020 is 3,252,517. One of the biggest challenges that the business fabric has always had is the digitization of freelancers and small businesses. Its implementation, together with training in digital skills, is a key factor for the reactivation of the economy. In fact, the digitization of the smallest could increase GDP by 1.8% each year until 2025. This is one of the conclusions of the report of the Digital Society in Spain 2019²¹, prepared by the Telefónica Foundation, which ensures that the **digitization of the industry, especially of SMEs and the self-employed**, and greater digital training of Spaniards are two “key factors” to achieve a return to normality in the economy and the generation of employment. **Only five out of every hundred micro-businesses and self-employed businesses sell through the internet**, while their competitors from large companies billed 8,974 million euros in the first quarter of last year through electronic commerce.

The importance of **digitization as an engine of innovation, of the ecological transition, and a vital element to improve competitiveness and productivity** is reflected within the Strategic Framework in Policy for SMEs 2030, where the following lines of action are proposed, among others, to the digitization of SMEs.

1. Incorporate digital tools in relation to SMEs with the Administration.
2. Facilitate the digital transformation of SMEs as a key element in their life cycle.
3. Improve the availability of various financing channels for the digitization of SMEs.
4. Develop assistance programs for SMEs in Industry 4.0, which allow diagnosing the degree of maturity of SMEs in this area and designing a digital improvement plan based on the diagnosis.
5. Support for the incorporation of enabling technologies - KET (nanotechnology, micro and nanoelectronics, photonics, advanced materials, advanced manufacturing systems and industrial biotechnology) in the manufacture of their products, either in the manufacturing processes, in the materials that they use or in the products they sell).
6. Establish mechanisms that promote the incorporation of SMEs into the vocational training circuit.

IMMIGRANTS

After a few recent years of decline, the recovery of the labor market and family reunification has had an impact on the increase in immigration: immigrants now represent 14% of the Spanish population and a fifth (21%) of the population between 25 and 49 years - central population of working age. Recent Spanish immigration has been mostly non-EU, economic and first-generation in nature, made up of young adults looking for a job. During these last two decades, a second generation of children of immigrants has already been formed. The trend is likely to increase, also taking into account that an undetermined percentage is irregular in nature, which will put pressure on the cohesion of society. A key to this cohesion and social integration will be the employability and professional success of these new generations. **Unemployment among immigrants continues to be higher than among Spaniards, at 21% compared to 14%.** And, undoubtedly, a tool for this will be training and qualification, which in turn represents an additional challenge, since, although there are no in-depth studies, some authors indicate indications of higher school drop-outs and less aspirational training in the immigrant population²².

Entrepreneurship cases are also beginning to appear in the children of immigrants in accordance with changes and technological innovation. An example is found in the Weimei company, a new mobile phone brand founded in Spain by Juan Yuan, the son of Chinese emigrants. According to the latest figures (2020) from the Ministry of Labor, Migrations and Social Security, Spain has **326,529 foreign self-employed workers**, which represents around **10% of the total number of self-employed workers**, a percentage that has grown compared to the end of 2017, when it was a 9.7%. Among them, the most numerous are those who come from outside the EU. Romania and China are the nationalities with the greatest presence and Catalonia is the community with the most immigrant self-employed workers, followed by Madrid. By

²¹ <https://www.fundaciontelefonica.com/noticias/informe-sociedad-digital-espana-2019/>

²² Ministerio de Trabajo, Migraciones y Seguridad Social, España



sectors **trade, hospitality and construction lead the ranking**, mainly very small business. In addition, **of the total number of foreign affiliates, 16.24% are self-employed**, according to the Ministry of Labor.

SENIORS

According to the population projections in Spain of the National Institute of Statistics INE (data from 2016), **the percentage of the population aged 65 years and over, which currently stands at 18.7%, would reach 25.6% in 2031**, with a significantly higher percentage of women. According to this projection, **11.7 million people over 64 years of age would reside in Spain in 2031, three million more than at present (34.8%)**. By five-year age groups, the most numerous at present is that of 40 to 44 years. But this will change in 2031, when the most effective group would be 55 to 59 years old.

In addition, life expectancy at birth, one of the highest in the European Union, follows a favourable evolution, both for men and women. And the same happens with healthy life expectancy at 65 years, which in the last ten years has increased by just over 3.5 years for both sexes, higher than the almost 2 years that the increase in life expectancy has meant at birth. **ICT use declines after 55 years of age and especially in the 65-74 age group (INE, 2017)**. People in these age groups state that they are afraid because the operating instructions are not clear or because of the lack of support (Vaporitzis, 2017)²³.

Older individuals have the lowest confidence in their own ability to start and run a business. Social networking and potential role-modelling in the form of knowing a start-up entrepreneur is also less frequent among seniors and, in particular, older people – **young and mid-aged individuals are almost twice as likely to have personal contact with a start-up entrepreneur, compared to older individuals**. However, risk-willingness is highest among older people. In line with these findings, **seniors and older individuals show significantly lower levels of entrepreneurial intention** than the other two age groups. There is a sharp decline in entrepreneurial intention from age fifty, with seniors half as likely to express entrepreneurial intentions compared to mid-aged individuals and older people half as likely to have entrepreneurial intentions compared to seniors. Gender has an influence on entrepreneurial behaviour by senior and older people. **Entrepreneurial intentions are lowest among senior women** compared to the other three age groups, with fewer than seven women expressing the intention to start a business for every ten men in this age group.²⁴

Older people had lower unemployment rates than other groups due to high levels of inactivity and early retirement (even at the expense of reduced pensions). Nonetheless, **Spanish seniors still had the second highest unemployment rate in the EU in 2017**²⁵. According to Eurostat, in Spain, the activity rate for people between 60 and 64 years of age is 45%, compared to 72% in Sweden. A little earlier, the difference is still notable: 72% of Spaniards between 55 and 59 remain active, while in Germany and Sweden this figure reaches 83% and 89%, respectively. Older people show an interest in learning, and especially in knowing ICT, although it is still a segment of the population that uses them less and has greater access difficulties due to the sensory changes that the organism experiences through the aging process that directly intervenes in the learning and use of ICT. It must be taken into account that the elderly are vulnerable people before the media, since they are **digital immigrants**, becoming **passive consumers of the digital age**²⁶.

2. Key Findings from Desk Research

The key relevant finding from desk research in Spain are:

²³ Vaporitzis, E., Martin, M., y Gow, A. J. (2016). A Tablet for Healthy Ageing: The Effect of a Tablet Computer Training Intervention on Cognitive Abilities in Older Adults. *The American Journal of Geriatric Psychiatry*, 25(8), 841-851. doi: 10.1016/j.jagp.2016.11.015

²⁴ <https://www.gem-spain.com/wp-content/uploads/2015/03/gem-2016-2017-seniors-report.pdf>

²⁵ <https://www.oecd.org/cfe/smes/SPAIN-IE-Country-Note-2018.pdf>

²⁶ Challenges in the current digital age: ICT and seniors at the University of Granada (Spain) / Current challenge in the digital age: ICT and the elderly at University of Granada (Spain).

https://www.researchgate.net/publication/341011811_Desafios_en_la_era_digital_actual_TIC_y_personas_seniors_de_la_Universidad_de_Granada_Espana_Current_challenge_in_the_digital_age_ICT_and_the_elderly_atMay28].



43% of people between 16 and 74 years of age lack basic digital skills

36% of the workforce lack basic digital skills, the situation being worse among the unemployed population (55%) than that of the employed (32%).

Barriers and needs of the relevant project target groups in Spain

The main barriers across the target groups of the project identified as well in the relevant research²⁷ as the greatest challenges in adopting new and digital technologies are presented in the following table:

Microfirms	Low Digital Skills	Women	Low Income
Internal organizational characteristics (lack of resources, formalization, complexity, compatibility, etc.)			
<ul style="list-style-type: none"> Limited resources to acquire assets (organizational and human capital) 	<ul style="list-style-type: none"> n/a 	<ul style="list-style-type: none"> Limited financial resources Time constraints due to their caring duties Limited participation in informal social network 	<ul style="list-style-type: none"> Constrained access to hardware and software
Individual characteristics (demographics, human capital, values, cognitive barrier, etc.)			
<ul style="list-style-type: none"> Cautious adopters of novel technologies Lower perceived benefits from e-business Lower growth ambition Lower digital skills literacy 	<ul style="list-style-type: none"> Lower perceived usefulness of technologies Lower exposure to new technologies Less willingness to follow innovators Greater risk aversion 	<ul style="list-style-type: none"> Technophobia Lower perceived entrepreneurial skill due to the male stereotyping of the domain Lower digital skills/ literacy Lower growth ambition Greater aversion to risk 	<ul style="list-style-type: none"> Lower perceived entrepreneurial skills Perceptions that low-income communities are not relevant markets Limited digital skills to take advantage of electronic media

TABLE 1. Summary of main barriers across the groups identified by the literature as those facing the greatest challenges in adopting new and digital technologies.

According to the studies carried out at the state level²⁸, we present below **what are the “digital” needs that each of the groups of identified beneficiaries have:**

Young people (15 - 24):

- Needs associated with “knowing how to do” with new technologies to participate in the community and in the new digital society (programming, operating devices such as drones, generating digital content, designing, etc.).
- Needs related to the responsible use of technology, security, privacy and critical thinking.
- Needs for orientation, training and specialization in preparation for entering the world of work. Need to work and reinforce soft skills or “soft skills” (communication, leadership, creativity, teamwork ...), which are transversal skills that are increasingly valued in the workplace.

Young people (15 - 24) without studying, without working:

- Needs associated with motivation and knowing how to do with purpose through new technologies, both digital and linked to STEAM concepts and maker spaces, for social or economic entrepreneurship.

Adults in general (25 - 65), without a specific segmentation:

- Needs associated with “knowing how to do” with technology, participate in communities and networks, generate content, use it in complex environments.
- Needs related to digital electronic administration, especially as new services emerge, related to community and democratic participation and, in general, related to the use of digital services of all kinds that are deployed in sectors such as financial, insurance, energy, mobility, etc.

²⁷ Digital transformation for inclusive business development projects. Impact evaluation and knowledge sharing report. IE Foundation. <https://socialinnovation.ie.edu/digital-transformation-for-inclusive-business-development/>

²⁸ <http://somos-digital.org/>

- Needs associated with the coexistence at home, work or environment of new digital concepts, such as Artificial Intelligence, robotics, chatbots, distributed registry systems, etc. Skill in solving problems related to technology in these environments.
- Needs related to understanding legislation, regulation, or privacy and security issues.
- Needs related to continuous learning, especially for the requalification of digital skills for the job.
- Certification of digital skills for accreditation in the workplace

People looking for work, both young and old:

- Qualification and requalification for employability, including both technical skills (more general or more specific, such as programming), as well as horizontal skills related to creativity, design, teamwork, etc.
- Certification of digital skills.

Entrepreneurs, freelancers and workers of small companies and SMEs:

- Needs associated with knowing how to do with purpose through new, digital and related technologies: management of tools for their application in processes, products and services, linking with clients and partners, eCommerce, people development, etc.
- Needs related to digital electronic administration from a business point of view.
- Skill in solving problems related to technology in the work environment.
- Needs related to legislation, regulation and issues related to privacy and security from a business perspective.
- Needs related to continuous and virtual learning of all kinds of skills and abilities.
- Qualification and requalification in the workplace for the skillful use of technology as it is being deployed in new services and with new functionalities.

People at risk of digital exclusion (rural population, women, immigrants, people with disabilities ...):

- Digital Literacy as a tool to improve their quality of life.
- Development of digital skills for their social, labor and personal inclusion in society, attending to the specific needs of each specific group: ICT accessibility in the case of people with disabilities, possible language support in the case of immigrants, etc.

Disciplines and digital skills needed by SMEs

According to the Chamber of Commerce of Valencia, we establish 10 key disciplines in the digital environment of a company and a total of 41 derived competencies requested by the Spanish SMEs independently of the nationality of its founder.

Digital marketing
<i>Competencies:</i>
▪ Preparation and execution of a digital marketing plan.
▪ Elaboration and execution of strategies to attract users with online media.
▪ Development and execution of customer loyalty strategies with digital media.
▪ Development of strategies for attracting and qualifying leads / records.
▪ Elaboration and execution of Social Media strategies in social networks.
▪ Creation and management of mobile device applications to better communicate and engage with customers.
▪ Development of strategies and implementation of technologies for customer management.
▪ Knowledge of localization technologies for the strategy and actions of the company.
e-Commerce
<i>Competencies:</i>

<ul style="list-style-type: none"> Preparation of a multi-channel e-commerce strategic plan Take advantage of digital technologies within the point of sale (Beacon, NFC, QR codes, ...) Integration of social networks in the online sales process (Social Commerce) Integration of different forms of payment Digitalization of supply and logistics management (Digital Logistic) Integrate technologies and customer service processes in the purchase process (e-Care) Digitalization of the commercial network management (e-Sales) Incorporation and adaptation of the online store on mobile phones.
UX (User Experience)
<i>Competencies:</i>
<ul style="list-style-type: none"> Development of strategies and implementation of Customer Service channels through social and digital media. Monitoring the experience of the entire life cycle of the client to know their habits and degree of satisfaction Implementation of a Customer Experience Plan
Digital Management
<i>Competencies:</i>
<ul style="list-style-type: none"> Classification and organization of information in an accessible way and with different levels of access (permissions) to favor its location at all times. Use of applications and cloud solutions for collaborative project management. Work with teams remotely and collaboratively through digital means (virtualization). Search professional profiles through online tools (e-Recruitment).
Internet of Things and Wearable Technology
<i>Competencies:</i>
<ul style="list-style-type: none"> Take advantage of connectivity technologies throughout the value chain to achieve greater efficiency. Incorporate Internet of Things and Wearable Technology to convert or endow products into value-added services. Explore opportunities to improve experience and new business models through Virtual Reality.
Digital Communication
<i>Competencies:</i>
<ul style="list-style-type: none"> Create, maintain and publicize the corporate blog and website. Creation and dissemination of brand content. Definition of a digital communication strategy with the most relevant digital media. Creation of a communication and relationship plan with the most important influencers in your industry. Listen and monitor the reputation of the brand and the competition in social networks. Have effective search engine advertising (SEM) planning and measurement. Have effective planning and measurement of advertising in digital media. Have effective planning and measurement of advertising on the main social networks. Innovate and test new forms of advertising and planning.
Web and Mobile Web
<i>Competencies:</i>
<ul style="list-style-type: none"> Development of a user-oriented web design for different devices (Responsive). Carry out an adequate analysis of the activity on the company's sites. Achieve a good positioning in search engines organically and on different devices (SEO).
Big Data
<i>Competencies:</i>
<ul style="list-style-type: none"> Have the ability to obtain relevant information for the brand and process large amounts of data.
Innovation
<i>Competencies:</i>
<ul style="list-style-type: none"> Have a specific strategy and technology to exploit the knowledge that the company has about customers. Have a business strategy and methodologies aimed at promoting digital innovation

3. Research Results: Best Practices

Title of the best practice:					
Cybervolunteers: Cibervoluntarios promoting technological volunteering in Spain					
<i>Underline the type that best describes the best practice:</i>					
Program	Project	Initiative	Report	Case study	Other: _____
Website: https://www.cibervoluntarios.org/es			Social media link(s):		



Leading organization/Author: Cibervoluntarios Foundation
Year/Timeframe: yearly
Target group(s)/Beneficiaries: elderly, people with disabilities, women entrepreneurs and primary and secondary students, educators and parents
Description Cibervoluntarios Foundation is a grassroots organisation that engages 1,500 volunteers around Spain. The volunteers detect digital skills needs, organise workshops and train citizens in digital competences. They run programmes targeting the elderly, people with disabilities, women entrepreneurs and primary and secondary students, educators and parents through workshop in cyberbullying and cybersecurity.
Relevance to The Missing Entrepreneurs (explain which elements of the best practice could be useful in the framework of the project): Join the initiative and use the same network and share the materials in order to reach more people.

Title of the best practice: Digitized	
<i>Underline the type that best describes the best practice:</i>	
Program <u>Project</u> Initiative Report Case study Other: _____	
Website: https://www.digitalizadas.org/	Social media link(s):
Leading organization/Author: Fundación Cibervoluntarios, Fundación Mujeres y Google.org,	
Year/Timeframe: yearly	
Target group(s)/Beneficiaries: women, especially in rural areas	
Description Digitized offers these training activities free of charge to any women's organization or entity that brings together a group of women, especially in rural areas, who want to reduce the gender gap and provide ICT training to promote employability and entrepreneurship among their beneficiaries.	
Relevance to The Missing Entrepreneurs (explain which elements of the best practice could be useful in the framework of the project): Join the initiative and use the same network and share the materials in order to reach more people.	

Title of the best practice: innovadorastic	
<i>Underline the type that best describes the best practice:</i>	
Program <u>Project</u> Initiative Report Case study Other: _____	
Website: https://www.innovadorastic.org/	Social media link(s):
Leading organization/Author: Fundación Cibervoluntarios, Ministry of Health, Consumption and Social Welfare.	
Year/Timeframe: yearly	
Target group(s)/Beneficiaries: women entrepreneurs	
Description In Innovadora TIC you will discover women entrepreneurs who are being leaders in technology and science. We tell you why it is important to make visible the stories of women who have opted for the ICT sector. The technology sector is a "highly masculinized" area in our country. Women represent less than a quarter of employed persons and to achieve the same salaries and positions as their peers they have to demonstrate their merits to a greater extent.	

The solution? Breaking with the idea, cultivated since childhood, that technology "is not for girls" and promoting real experiences of women entrepreneurs in the technology sector.

Relevance to The Missing Entrepreneurs (explain which elements of the best practice could be useful in the framework of the project):

Join the initiative and use the same network and share the materials in order to reach more people.

Title of the best practice:

GeneraZión

Underline the type that best describes the best practice:

Program **Project** **Initiative** **Report** **Case study** **Other:** _____

Website: <https://www.generazion.org/>

Social media link(s):

Leading organization/Author:

Fundación Cibervoluntarios, Zona from Facebook

Year/Timeframe: yearly

Target group(s)/Beneficiaries:

women, especially in rural areas

Description

GeneraZión is an educational project aimed at young people between 14 and 18 years old whose purpose is to promote critical thinking and internet safety. We seek to promote a critical and secure digital citizenship that has the necessary tools and knowledge to make the most of the opportunities that the internet offers.

In our second edition, we will reach 7,500 young people through online training sessions in educational centers, and thousands more in our Interactive Zone, with a virtual tour through three challenges that will put your digital skills to the test. You can choose your adventure with Challenge Z, dare to leave Escape Room Z or choose the end of the characters from Stories Z.

Relevance to The Missing Entrepreneurs (explain which elements of the best practice could be useful in the framework of the project):

Join the initiative and use the same network and share the materials in order to reach more people.

Title of the best practice:

donate devices

Underline the type that best describes the best practice:

Program **Project** **Initiative** **Report** **Case study** **Other:** _____

Website: <https://ametic.es/es/nuestro-trabajo>

Social media link(s):

Leading organization/Author:

AEMETIC, Ministry of Education

Year/Timeframe: yearly

Target group(s)/Beneficiaries:

school students from disadvantaged backgrounds

Description

AMETIC, in collaboration with the Ministry for Education and Professional Training is mobilising its members to donate devices such as tablets, laptops and high-capacity phone lines to be distributed to school students from disadvantaged backgrounds.

Relevance to The Missing Entrepreneurs (explain which elements of the best practice could be useful in the framework of the project):

Join the initiative and use the same network and share the materials in order to reach more people.

Title of the best practice: Empleando digital	
<i>Underline the type that best describes the best practice:</i>	
Program <u>Project</u> Initiative Report Case study Other: _____	
Website: https://www.gitanos.org/que-hacemos/areas/employment/empleando_digital.html	Social media link(s):
Leading organization/Author: Fundación Secretariado Gitano (FSG) and the Spanish Red Cross (SRC), in close collaboration with the Accenture Foundation. The project is co-financed by the Accenture Foundation and the European Social Fund.	
Year/Timeframe: yearly	
Target group(s)/Beneficiaries: People at risk of exclusion	
Description <p>The project was launched during 2017 with a clear objective: bringing up-to-date, improving and bringing innovation to the processes and methodologies of our employment programmes in order to continue successfully supporting the people we work with in a labour market that is being transformed by the new technologies.</p> <p>To achieve this, #EmpleandoDigital has focused on two key aspects:</p> <ul style="list-style-type: none"> • Training our employment teams and bringing our methodologies and processes up-to-date. • Enhancing the digital knowledge and skills of the people at risk of exclusion that take part in our employment programmes. <p>#EmpleandoDigital has been deployed in 12 regions and over 300 professionals from 26 employment teams have been directly involved in it (13 teams from FSG and 13 from Spanish Red Cross). More than 10,000 people at risk of exclusion have participated in the project, improving their digital skills and knowledge.</p> <p>In total, 9,826 people have improved their digital skills and knowledge thanks to #EmpleandoDigital, being more than 50% women</p>	
Relevance to The Missing Entrepreneurs (explain which elements of the best practice could be useful in the framework of the project):	
Join the initiative and use the same network and share the materials in order to reach more people.	

4. Research Results: Questionnaires

During the month of May 2021 we launched a questionnaire to the pre-defined target groups in order to collect the actual needs of the project target groups as follows:

The under-represented population groups in digital entrepreneurship focused on 4 types of end users:

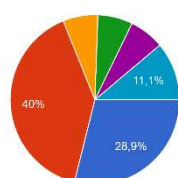
- Women: of any age.
- Immigrants: any person with a migratory background¹. In this list is included any person who has:
 - migrated into their present country of residence;
 - previously had a different nationality from their present country of residence;
 - at least one of their parents previously entered their present country of residence as a migrant.
- Youth: it is usually referred to people from 15 to 29. In some context (this applicable to our project) the definition can be extended up to people aged 34².
- Seniors: In some contexts, such as employment (this applicable to our project), people may be considered 'older' as of age 55 or even 50, on average in the EU a person is thought of as old just before he or she reaches 64 years of age⁴.
- In terms of knowledge and experience we would primarily target the above groups that are:
- New entry entrepreneurs: Recently started their business and want to improve their businesses or take advantage of digital tools for carrying out their businesses.



- Willing to become entrepreneurs: These would be people who are thinking on starting their own business and seek for help and tools in this regard. For example, to engage these groups, we could contact public administration with employment offices and entrepreneurship programmes.

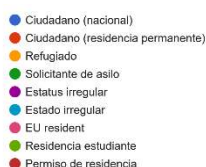
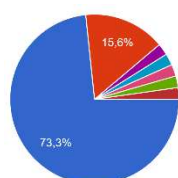
Field research results

We obtained 45 answers distributed in the following way regarding the demographic data:

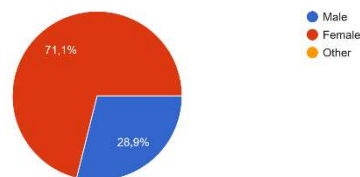


Almost 70% of the participants were between 18 and 34 years old. 11% over 65 and 7% each of the rest age ranges 35-44, 45-54 and 55-64.

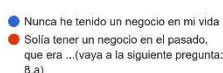
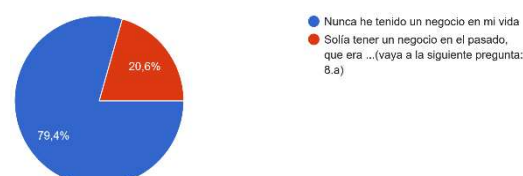
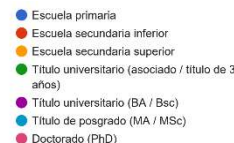
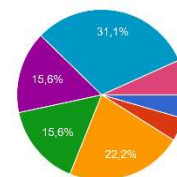
Regarding the gender 70% of the participants were female and 30% male.



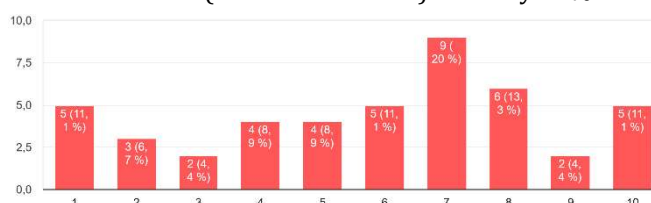
Only 4% of the participant had a different nationality than Spanish and 99% of them with their residence in Spain. Regarding the legal status 73% were nationals, Spanish, 16% people with permanent residence and only 1% each was irregular, EU resident, student and with legal permit.



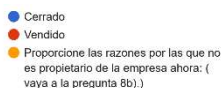
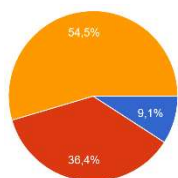
Regarding the level of studies 60% had superior level of studies (university and above), 26% secondary school level and 4% primary school level.



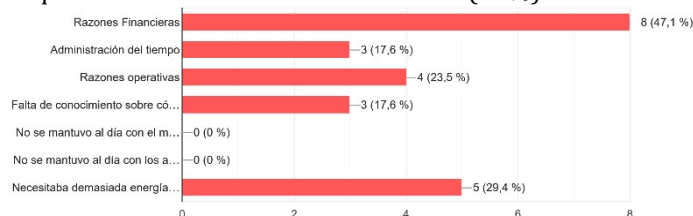
Although 79% of the participants declare have not had an own business ever, 70% declares to be familiar with the business creation (scale from 5 to 10) and only 30% is not



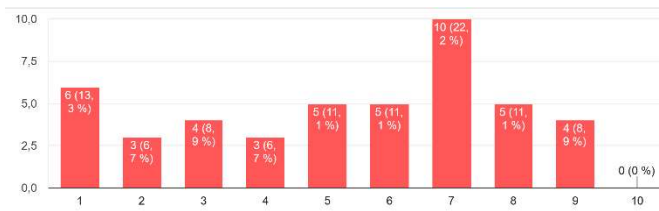
familiar with this process. Of the 21% of participating entrepreneurs 50% had an ongoing business for over 5 years and 50% less than 5.



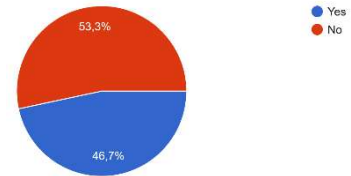
Of those who were entrepreneurs in the past 9% closed it down and 36% sold it. The majority reasons given for not having a running business in the moment of answering the questionnaire are of financial nature (50%) or related to



the lack of other resources like energy (29%), time (18%) and other operational issues (24%). 17% claims the lack of knowledge about business creation and management.



The minority (14%) of the participants considers itself familiar with the digital



entrepreneurship although the almost the half

of the participants has considered this options as an interesting one to start a business.

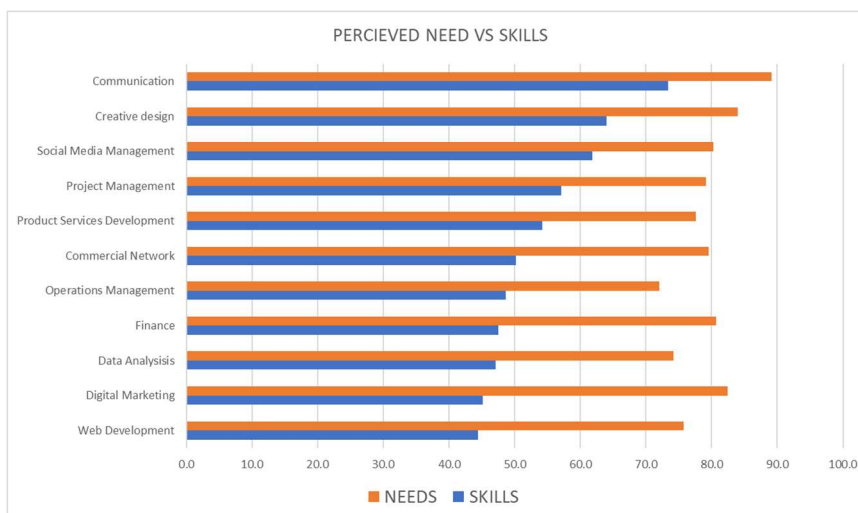
The reasons mentioned to explain the interest (46,7%) are different:

- Inspired by a START UP of a friend
- Covid 19 and its consequences for the offline businesses
- Need to be more present in the internet, social networks and platforms
- A possibility to expand the existing business
- Adaptation to the digitized world
- New opportunities for businesses in the digital world
- Promising as low cost/ high benefit
- Technology as support for decision making
- Gives more autonomy, commodity and flexibility

The rest (53%) of the participants' name as well different reasons to explain why they do not consider the digital entrepreneurship as an option:

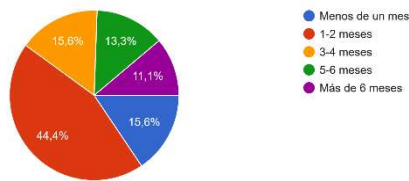
- Lack of knowledge about the technologies
- Lack of understanding of the given opportunities
- Lack of business ideas
- Lack of interest
- Lack of time
- Lack of money
- Other preferences regarding the entrepreneurship
- Entrepreneurship per se not see as an option
- Fast development of the new technologies

Lack of knowledge is underlined as one of the main issues at the moment to take the decision and create a digital business. The participants were asked to autoevaluate their knowledge and practical familiarity with as well as the perceived relevance of the following skills: Communication, Finance, Operations Management, Project Management, Digital Marketing, Social Media Management, Commercial Network, Data Analysis, Web Development, Creative design and Product Services Development.

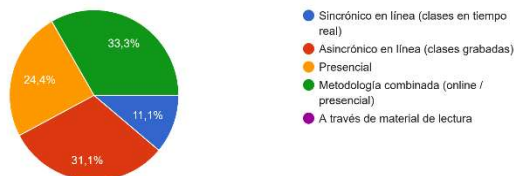


The complete analysis of the perceived existing skills and relevance give as quite a clear idea of the needed skills as presented in the following comparative graph. We can observe that the participant rate their level of skills related to communication, design and project and product management higher than those related to finances, data analysis, digital marketing or web development. At the same

time, they show clear needs to close the gap of knowledge they perceive that they have in those area they rate themselves as less skilled as well as understand their relevance as for instance finances, data analysis, digital marketing or web development.



Related to the training preferences on how to start or adapt the own business to digital business, the participants declare to be willing to spend shorter periods of time dedicated to it: 16% less than a month and 44% 1-2 months which makes 60%. Only 11% is ready to dedicate more than 6 months and 15% 3-4 months and 13% 4-5 months.



They also show preferences for the asynchronic online sessions 31% or synchronic 11% as well as off and -online combined 33%. The face to face offline module an option for 24%.

A 100% of the participants declare to have equipment that would allow them to access online learning.

5. Conclusions and Recommendations

The centrality of the new information and communication technologies in the various fields has crystallized in new ways of communicating and relating in our life in society. This impact has been generalized in all areas and this outlines new scenarios for the future in our relationship with training and work including the entrepreneurship and specially the digital one.

The recent situation in relation to the COVID-19 pandemic and the impacts it may have on the digital entrepreneurship and the labor market in general, have only given greater centrality to the importance of digital skills and their relationship as a competitive factor in a context of economic uncertainty. One of the challenges from a sociological perspective is to explore whether these changes will have an unequal effect among the different members of society or whether, indeed, the level of digital skills can become a determining factor in accessing the market.

One of the main results of the analysis shows how, among the surveyed persons, there is a very important percentage of the people with an intermediate and advanced level of digital skills, more than 50%. Instead, it is highlighted how approximately 24% have basic skills or do not have digital skills (11%). Among the different sub-dimensions of digital skills -information, communication, problem solving and computing-, it stands out how computer skills are the least extended, since only half of the surveyed persons claims to have an advanced level, so they become the most discriminatory.

We recommend to follow the established 10 key disciplines in the digital environment of a company and a total of 41 derived competencies requested by the Spanish SMEs presented on the page 17f in the moment of the creation the training programmes to be offered by The Missing Entrepreneurship project.

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