

Ayuda en Acción – eMprende: Employability and Entrepreneurship Enhancement Project for Socially Disadvantaged Youth

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The General Secretariat of Inclusion of the Ministry of Inclusion, Social Security, and Migration has prepared this report within the framework of the Inclusion Policy Lab, as part of the Recovery, Transformation, and Resilience Plan (RTRP). It has been funded by the Next Generation EU funds. As the agency in charge of carrying out the project, Fundación Ayuda en Acción has collaborated in the elaboration of this report. This collaborating organization is one of the implementers of the pilot projects and has collaborated with the General Secretariat of Inclusion in the design of the RCT methodology, actively participating in the provision of the necessary information for the design, monitoring, and evaluation of the social inclusion itinerary. Furthermore, their collaboration has been essential to gathering informed consents, ensuring that participants in the itinerary were adequately informed and that their participation was voluntary.

A research team coordinated by CEMFI (Center for Monetary and Financial Studies) has substantially contributed to this study. Specifically, Ana García Hernández, senior research, and policy manager at JPAL EUROPA, Inés Torres Rojas, research and public policy associate at J-PAL Europe, Pablo Montero Lomas, employee of the Tragsa Group, and Paola Giannattasio, predoctoral researcher at CEMFI, has participated under the coordination of Mónica Martínez-Bravo (until January 8th, 2024) and Samuel Bentolila, professors at CEMFI. The researchers have actively participated in all phases of the project, including the adaptation of the initial proposal to the needs of the evaluation through randomized experiments, the evaluation design, the definition of measurement instruments, data processing, and the performance of econometric estimations that lead to quantitative results.

The partnership with J-PAL Europe has been a vital role in the efforts of the General Secretariat of Inclusion to improve social inclusion in Spain. Their team has provided technical support and shared international experience, assisting the General Secretariat in the comprehensive evaluation of pilot programs. Throughout this partnership, J-PAL Europe consistently demonstrated a commitment to fostering evidence-based policy adoption, integrating empirical data into strategies that promote inclusion and progress within our society.

This evaluation report has been produced using the data available at the time of its writing and it is based on the knowledge acquired about the project up to that date. The researchers reserve the right to clarify, modify, or delve into the results presented in this report in future publications. These potential variations could be based on the availability of additional data, advances in evaluation methodologies, or the emergence of new information related to the project that may affect the interpretation of the results. The researcher is committed to continuing exploring and providing more accurate and updated results for the benefit of the scientific community and society in general.

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Executive Summary

- The Minimum Income Scheme, established in May 2020, is a minimum income policy that aims to guarantee a minimum income to vulnerable groups and provide ways to promote their social and labor integration.
- Within the framework of this policy, the Ministry of Inclusion, Social Security and Migration (MISSM) fosters a strategy to promote inclusion through pilot projects of social innovation, which is conducted in the Inclusion Policy Lab. These projects are evaluated according to the standards of scientific rigor and using the methodology of Randomized Controlled Trials.
- This document presents the evaluation results and main findings of the "eMprende: Employability and Entrepreneurship Enhancement Project for Socially Disadvantaged Youth", which has been performed in **cooperation between the MISSM and Ayuda en Acción**, an entity of the Third Sector of Social Action that seeks to generate opportunities in environments of social exclusion and high vulnerability.
- This study evaluates an educational program designed to enhance employability skills and foster an entrepreneurial culture among **young people** who face situations of risk and social exclusion, enrolled in **vocational training centers**.
- The treatment group was provided with vocational and career guidance, key competency development, and initiatives to bridge the gap between schools, the learners' environments, and businesses. This approach aimed to offer students a comprehensive set of tools to ease their transition into the labor market and promote training tailored to their career aspirations. The control group did not receive any intervention.
- The intervention was conducted in vocational educational centers situated in disadvantaged areas of Extremadura, Andalusia, and Galicia. The experiment included 51 schools: 30 in Extremadura, 10 in Galicia, and 11 in Andalusia. A total of 5,727 students participated, with 3,032 in the treatment group and 2,695 in the control group.
- The project participants had an average age of 19 years. Among them, 18% were enrolled in basic vocational training, 46% in intermediate vocational training, and 36% in higher vocational training. Prior to the intervention, 7% of participants had experienced social or material deprivation. Additionally, about 70% were exclusively dedicated to their studies, and less than 20% reported being employed.
- The main results of the evaluation are as follows:
 - **The treatment enhances entrepreneurial attitude:** the program significantly boosted entrepreneurial attitude by 4.5% compared to the control group.
 - **Enhances suitability for entrepreneurial behavior:** the treatment improved the adequacy of entrepreneurial behavior by 4.7% compared to the control group.
 - **Reduces school dropout and increases the likelihood of continued education or employment:** the program significantly lowered the probability of dropping out of school by 2% and significantly increased the probability of working or continuing education afterward by 2% compared to the control group.
 - **The impact varied by region:** the program had a significant and positive effect on entrepreneurship and job search capacity only in Extremadura. In Andalusia, the

perception of job skills showed a more pronounced improvement. Furthermore, only in Galicia did the probability of studying or working significantly increase, while in Andalusia, there was a smaller but positive and significant effect on knowledge of the work project.

1 Introduction

General Regulatory Framework

The Minimum Income Scheme (MIS), regulated by Law 19/2021¹, is an economic benefit whose main objective is to prevent the risk of poverty and social exclusion of people in situations of economic vulnerability. Thus, it is part of the protective action of the Social Security system in its non-contributory modality and responds to the recommendations of various international organizations to address the problem of inequality and poverty in Spain.

The provision of the MIS has a double objective: to provide economic support to those who need it most and to promote social inclusion and employability in the labor market. This is one of the social inclusion policies designed by the General State Administration, together with the support of the Autonomous Communities, the Third Sector of Social Action, and local corporations². It is a central policy of the Welfare State that aims to provide minimum economic resources to all individuals in Spain, regardless of where they live.

Within the framework of the National Recovery, Transformation, and Resilience Plan (RTRP),³ the General Secretariat of Inclusion (SGI) of the Ministry of Inclusion, Social Security and Migration (MISSM) participates significantly in Component 23 "New public policies for a dynamic, resilient, and inclusive labor market", framed in Policy Area VIII: "New care economy and employment policies".

Investment 7: "Promotion of Inclusive Growth by linking socio-labor inclusion policies to the Minimum Income Scheme" is among the reforms and investments proposed in this Component 23. Investment 7 promotes the implementation of a new model of inclusion based on the MIS which reduces income inequality and poverty rates. Therefore, the MIS goes beyond being a mere economic benefit and supports the development of a series of complementary programs that promote socio-labor inclusion. However, the range of possible inclusion programs is very wide, and the government decides to pilot different programs and interventions to evaluate them and generate knowledge that allows prioritizing certain actions. With the support of investment 7 under component 23, the MISSM establishes a new framework for pilot inclusion projects constituted in two phases through two royal decrees covering a set of pilot projects based on experimentation and evaluation:

¹ Law 19/2021, dated December 20, establishing the Minimum Income Scheme (BOE-A-2021-21007).

² Article 31.1 of Law 19/2021, of December 20, 2021, establishing the Minimum Income Scheme.

³ The Recovery, Transformation, and Resilience Plan refers to the Recovery Plan for Europe, which was designed by the European Union in response to the economic and social crisis triggered by the COVID-19 pandemic. This plan, also known as Next Generation EU, sets out a framework for the allocation of recovery funds and for boosting the transformation and resilience of member countries' economies.

- **Phase I: Royal Decree 938/2021⁴**, through which the MISSM grants subsidies for the execution of 16 pilot projects of inclusion pathways corresponding to autonomous communities, local organizations, and the Third Sector of Social Action organizations. This royal decree contributed to the fulfillment of milestone number 350⁵ and monitoring indicator 351.1⁶ of the RTRP.
- **Phase II: Royal Decree 378/2022⁷**, which grants subsidies for a total of 18 pilot projects of inclusion pathways executed by autonomous communities, local organizations, and the Third Sector of Social Action organizations. Along with the preceding Royal Decree, this one helped the RTRP's monitoring indicator number 351.1 to be fulfilled.

To support the implementation of evidence-based public and social policies, the Government of Spain decided to evaluate the social inclusion pilot projects using the Randomized Controlled Trial (RCT) methodology. This methodology, which has gained relevance in recent years, represents one of the most rigorous tools to measure the causal impact of a public policy intervention or a social program on indicators of interest, such as social and labor insertion or the well-being of beneficiaries.

Specifically, RCT is an experimental method of impact evaluation in which a representative sample of the population potentially benefiting from a public program or policy is randomly assigned either to a group receiving the intervention or to a comparison group that does not receive the intervention for the duration of the evaluation. Thanks to the randomization in the allocation of the program, this methodology can statistically identify the causal impact of an intervention on a series of variables of interest. This methodology enables us to analyze the effect of this measure, which helps determine whether the policy is adequate to achieve the planned public policy objectives. Experimental evaluations enable us to obtain rigorous results of the intervention effect, i.e., what changes the participants have experienced in their lives due to the intervention. In addition, these evaluations provide an exhaustive analysis of the program and its effects, providing insights into why the program

⁴ Royal Decree 938/2021, of October 26, 2021, which regulates the direct granting of subsidies from the Ministry of Inclusion, Social Security, and Migration in the field of social inclusion, for an amount of €109,787,404, within the framework of the Recovery, Transformation, and Resilience Plan (BOE-A-2021-17464).

⁵ Milestone 350 of the RTRP: "Improve the rate of access to the Minimum Income Scheme and increase the effectiveness of the MIS through inclusion policies, which, according to its description, will translate into supporting the socio-economic inclusion of the beneficiaries of the MIS through itineraries: eight collaboration agreements signed with subnational public administrations, social partners and social action entities of the third sector to conduct the itineraries. The objectives of these partnership agreements are: (i) to improve the MVI access rate; ii) increase the effectiveness of the MVI through inclusion policies."

⁶ Monitoring indicator 351.1 of the RTRP: "at least 10 additional collaboration agreements signed with subnational public administrations, social partners and social action entities of the third sector to conduct pilot projects to support the socio-economic inclusion of MVI beneficiaries through itineraries".

⁷ Royal Decree 378/2022, of May 17, 2022, regulating the direct granting of subsidies from the Ministry of Inclusion, Social Security, and Migration in the field of social inclusion, for an amount of €102,036,066, within the framework of the Recovery, Transformation and Resilience Plan (BOE-A-2022-8124).

was effective, who has benefited most from the interventions, whether there were indirect or unexpected effects, and which components of the intervention worked, and which did not.

These evaluations have focused on the promotion of social and labor inclusion among MIS beneficiaries, recipients of regional minimum incomes, and other vulnerable groups. In this way, the MISSM establishes a design and impact evaluation of results-oriented inclusion policies, which offers evidence for decision-making and its potential application in the rest of the territories. The promotion and coordination of 32 pilot projects by the Government of Spain has led to the establishment of a laboratory for innovation in public policies of global reference named the Inclusion Policy Lab.

For the implementation and development of the Inclusion Policy Lab, the General Secretariat of Inclusion has established a governance framework that has made it possible to establish a clear and potentially scalable methodology for the design of future evaluations, and promoting decision-making based on empirical evidence. The General State Administration has had a triple role as promoter, evaluator, and executive of the different programs. Different regional and local administrations and the Third Sector of Social Action organizations have implemented the programs, collaborating closely in all their facets, including evaluation and monitoring. In addition, the Ministry has had the academic and scientific support of the Abdul Latif Jameel Poverty Action Lab (J-PAL) Europe and the Centre for Monetary and Financial Studies (CEMFI), as strategic partners to ensure scientific rigor in the assessments. Likewise, the Inclusion Policy Lab has an Ethics Committee⁸, which has ensured the strictest compliance with the protection of the rights of the people participating in the social inclusion pathways.

This report refers to the project "eMprende: Employability and Entrepreneurship Enhancement Project for Socially Disadvantaged Youth", executed within the framework of Royal Decree 378/2022 by the Ayuda en Acción Foundation, an entity of the Third Sector of Social Action that focuses its action on the defense of the right to self-sufficiency of all people in all parts of the world. This report contributes to the fulfillment of milestone 351 of the RTRP: "Following the completion of at least 18 pilot projects, the publication of an evaluation on the coverage, effectiveness and success of the MVI, including recommendations to increase the level of application and improve the effectiveness of social inclusion policies".

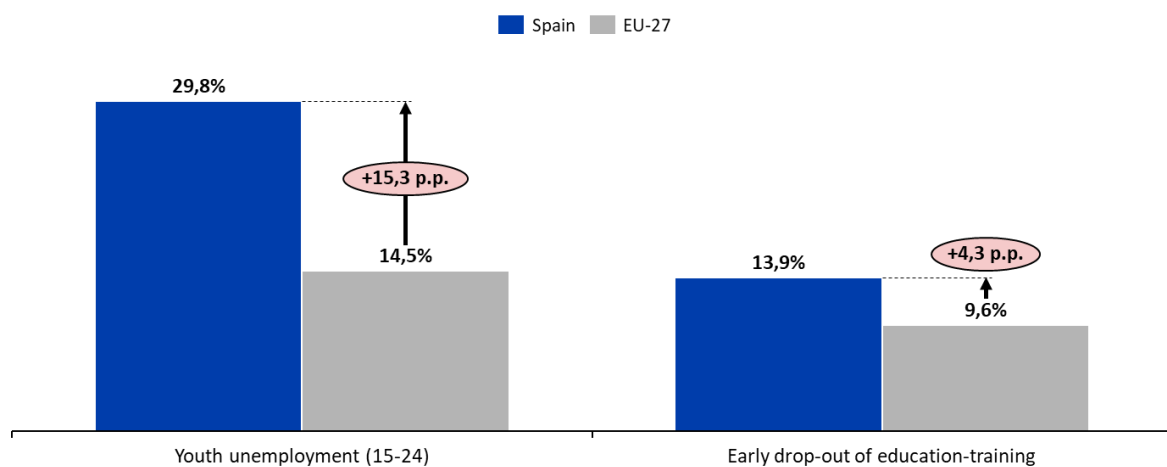
Context of the project

Youth unemployment is becoming one of the primary challenges in Spain today. This issue not only highlights a lack of job opportunities for young people but is also closely linked to poverty and social exclusion. The absence of adequate employment can undermine young people's self-esteem and impede their social integration, leading to a sense of marginalization. Additionally, this issue affects their long-term access to resources and opportunities, perpetuating cycles of inequality and limiting their chances for personal and professional growth.

⁸ Regulated by Order ISM/208/2022, of March 10, 2022, which creates the Ethics Committee linked to social inclusion itineraries, on 20/05/2022 it issued a favorable report for the realization of the project that is the subject of the report.

Youth unemployment in Spain is alarmingly high, with a 29.8% unemployment rate among young people aged 15 to 24 in 2022⁹. This places Spain as the second highest in the European Union, more than double the EU-27 average of 14.5%. This significant discrepancy can be partly attributed to educational differences, as Spain's early dropout rate is 13.9%, compared to the EU average of 9.6%. The high rate of early school leaving significantly contributes to youth unemployment by negatively affecting young people's readiness and skills to enter the labor market, thus exacerbating disparities compared to other EU countries.

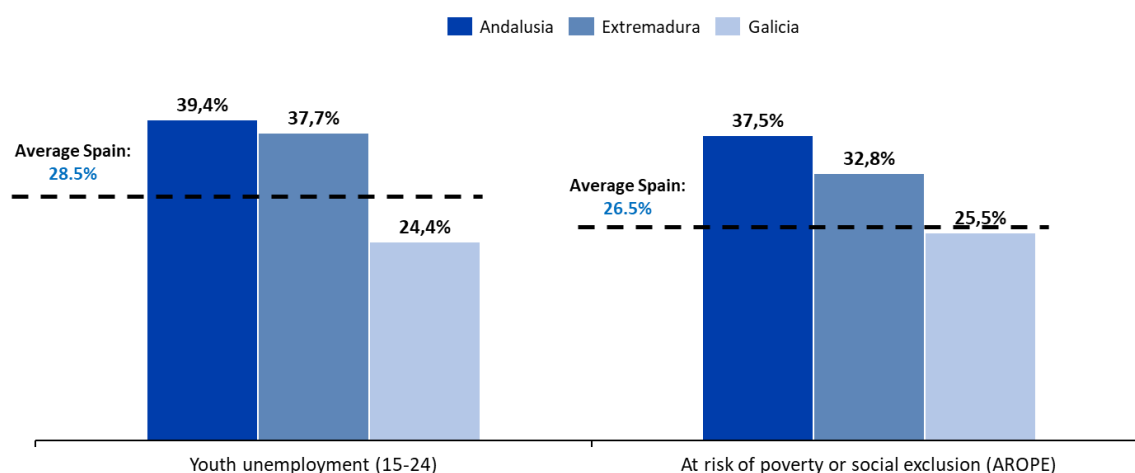
Figure 1: Youth unemployment rate and early leavers from education-training (2022)



Fuente: Total unemployment- LFS series, Eurostat. Education and training outcomes, Eurostat.

Among the autonomous communities targeted by this initiative, Andalusia, Galicia, and Extremadura face significant challenges in integrating young people into the labor market. Data from these regions, regarding youth unemployment and the percentage of households at risk of poverty or social exclusion, underscore the urgency of implementing interventions aimed at young people at risk of exclusion.

⁹ Source: Eurostat

Figure 2: Youth unemployment rate and at-risk-of-poverty and/or social exclusion rate (2023)

Source: Active Population Survey, INE. Survey of Living Conditions, INE

Regulatory framework associated with the project and governance structure

The European Union encourages Member States to reduce youth unemployment and inactivity, seeking to promote the development of young people and their insertion into the labor market. Recent measures include the strengthening of the Youth Guarantee, which guarantees young people access to employment, continuing education, apprenticeships, and traineeships. Additionally, efforts are underway to modernize vocational education and training systems in alignment with the 2020 Council Recommendation on vocational education and training for sustainable competitiveness, social equity, and resilience. This modernization aims to render these systems more appealing and aligned with the demands of the digital and sustainable economy.

Through the Osnabrück Declaration 2020, the Ministers of Education and Vocational Training of the Member States have endorsed a new series of policy actions on vocational training spanning the period 2021-2025. This includes the advancement and reinforcement of Centers of Vocational Excellence, envisioned as pioneering hubs integrating learning endeavors, training, research, entrepreneurship support, and the utilization of digital and technological resources.

In this context, Spain ratified the First Strategic Plan for Vocational Training of the Education System in 2019, emphasizing collaboration with businesses, the revision of qualifications, and flexibility in the organization of vocational training qualifications as pivotal elements. Moreover, the promotion of digital training and alignment with labor market demands are also advocated for.

Finally, all European and national regulations are in line with the framework established in the 2030 Agenda and the Sustainable Development Goals (SDGs).

The pilot project under scrutiny in this report is in harmony with both European and national strategies concerning the digital divide and social exclusion. Additionally, it aligns with the 2030 Agenda for

Sustainable Development, notably contributing to Sustainable Development Goals (SDGs) 1, 4, 8, and 10.

Due to the strong connection between training and youth unemployment, Ayuda en Acción has developed a project with the aim of enhancing the employability and entrepreneurial prospects of young individuals at risk of social exclusion who are enrolled in vocational training centers. This endeavor revolves around the establishment and activation of Entrepreneurship Classrooms.

The scientific objective of this project is to examine and contrast whether the implementation of the intervention leads to an improvement in the levels of employability and entrepreneurship of the participating students.

The governance framework configured for the correct execution and evaluation of the project includes the following actors:

- **Fundación Ayuda en Acción (AEA)**, entrusted with the project's execution. Ayuda en Acción is a global organization committed to fostering opportunities in regions marked by social exclusion and severe vulnerability across more than 20 countries. Its mission focuses on supporting individuals during critical life stages, including childhood and youth, by providing access to education, assisting in the transition to employment and entrepreneurship, and promoting sustainable development within the communities it serves.
- The **Ministry of Inclusion, Social Security and Migration (MISSM)**, as the project funder, and the main responsible for the RCT evaluation process. Thus, the General Secretariat of Inclusion (SGI) assumes the following commitments:
 - Assisting the beneficiary organization in the design of activities to be conducted for the implementation and monitoring of the grant object, as well as profiling potential participants in the pilot project.
 - Designing the randomized controlled trial (RCT) methodology of the pilot project in coordination with the beneficiary organization and scientific collaborators. Additionally, conducting the project evaluation.
 - Ensuring strict compliance with ethical considerations by obtaining approval from the Ethics Committee.
- **CEMFI and J-PAL Europe**, as scientific and academic institutions that support MISSM in the design and the RCT evaluation of the project.

In view of the above, this report follows the following structure. Section 2 provides a project description, detailing the issues to be addressed, the target audience for the intervention, and the specific interventions associated with improving levels of social inclusion. Next, Section 3 contains information related to the evaluation design, defining the theory of change linked to the project, hypotheses, sources of information, and indicators used. Section 4 describes the implementation of the intervention, analyzing the sample, the results of random allocation, and the level of participation and attrition in the intervention. This section is followed by Section 5, which presents the evaluation results, with a detailed analysis of the econometric analysis carried out and the

results for each of the indicators used. Finally, the general conclusions of the project evaluation are described in Section 6. Besides, in the Economic Management and Regulatory appendix, additional information is provided on management tools and project governance.

Ethics Committee linked to the Social Inclusion Itineraries

During research involving human individuals, in the field of biology or the social sciences, researchers and workers associated with the program often face ethical or moral dilemmas in the development of the project or its implementation. For this reason, in many countries it is common practice to create ethics committees that verify the ethical viability of a project, as well as its compliance with current legislation on research involving human beings. The Belmont Report (1979) and its three fundamental ethical principles – respect for individuals, profit, and justice – constitute the most common frame of reference in which ethics committees operate, in addition to the corresponding legislation in each country.

With the aim of protecting the rights of participants in the development of social inclusion itineraries and ensuring that their dignity and respect for their autonomy and privacy are guaranteed, [Order ISM/208/2022 dated March 10](#) creates the Ethics Committee linked to the Social Inclusion Itineraries. The Ethics Committee, attached to the General Secretariat of Inclusion and Social Welfare Objectives and Policies, is composed of a president – with an outstanding professional career in defense of ethical values, a social scientific profile of recognized prestige and experience in evaluation processes – and two experts appointed as members.

The Ethics Committee has conducted analysis and advice on the ethical issues that have arisen in the execution, development, and evaluation of the itineraries, formulated proposals in those cases that present conflicts of values and approved the evaluation plans of all the itineraries. In particular, the Ethics Committee issued its approval for the development of this evaluation on December 28, 2022.

2 Description of the program and its context

This section describes the program that Action Aid implemented as part of the pilot project. Furthermore, it describes the target population and the territorial framework and provides a detailed description of the intervention.

2.1 Introduction

The "eMprende" pilot project by Ayuda en Acción aims to enhance employability and entrepreneurship for youth at risk of social exclusion during their transition from education to the workforce. This project's primary goal is to improve opportunities for further education and labor market integration for this demographic group, enrolled in Vocational Training Centers in the autonomous communities of Extremadura, Andalusia, and Galicia.

The employment and entrepreneurship strategy of Ayuda en Acción aims to transform educational centers into strategic spaces for fostering employability and entrepreneurial spirit among students. This is achieved through interdisciplinary actions, the creation of creative learning environments, and the promotion of a sense of belonging to the group. Thus, it is expected that both students and their surroundings can benefit from the actions aimed at strengthening employability and entrepreneurial culture in these centers.

A promising approach to tackling this challenge involves nurturing entrepreneurial skills among youth, thereby fostering self-employment, and boosting overall employment rates. Young people tend to exhibit a greater willingness to explore diverse opportunities and make decisions under conditions of uncertainty, as demonstrated by Donkers et al. (2001). Given that the inclination towards risk typically declines with age (Dohmen et al., 2005), youth naturally lean towards entrepreneurship. Furthermore, young individuals tend to exhibit a higher ability to generate innovative ideas and think outside conventional norms due to their extensive social interactions, potentially deviating from traditional products and production methods according to Liang et al. (2018). Therefore, fostering entrepreneurship among young people is a powerful strategy to mitigate the risk of social exclusion in this group.

In this context, it's noteworthy that empirical evidence indicates that integrating soft skills training enhances the effectiveness of vocational training. Osman and Speer (2022) examined training initiatives in Egypt that combined soft skills with hard skills, demonstrating superior job outcomes compared to programs focusing solely on either hard or soft skills after 18 months. Similarly, in Colombia, soft skills training contributed to sustained employment and monthly wage levels over the long term, as highlighted by Barrera-Osorio et al. (2023).

The impact of entrepreneurship training programs remains unclear due to conflicting findings in the literature. Despite being based on the largest randomized controlled trial to date, Fairlie, Karlan, and Zinman's (2012) research found no significant effects for individuals facing challenges such as credit constraints, limited human capital, or labor market discrimination. However, a relatively strong short-term effect is observed in business creation for initially unemployed individuals, although broader or long-term effects on business ownership, business performance, or other outcomes are not evident. Conversely, Algan et al. (2014) study on the effect of a program designed to enhance autonomy and decision-making skills among youth reveals a positive impact on their employment status, income, and level of confidence.

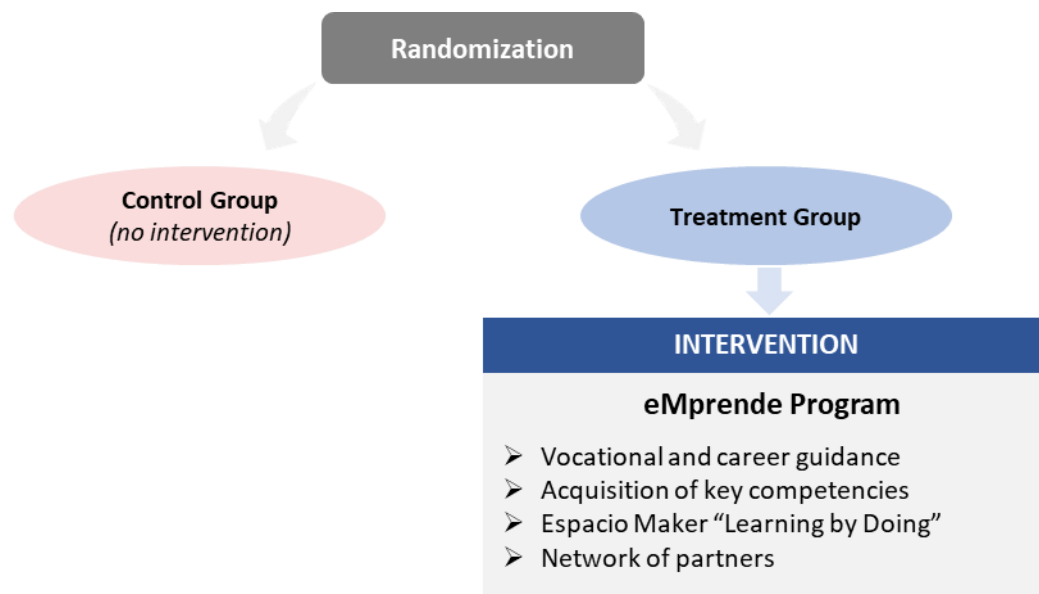
2.2 Target population and territorial scope

This initiative focuses on young people who are at risk of social exclusion, attending Vocational Training centers that offer educational programs spanning from Basic Training to advanced levels. The intervention specifically targets Vocational Training centers located in high-complexity settings or disadvantaged areas across Extremadura, Andalusia, and Galicia.

2.3 Description of interventions

The proposed itinerary is implemented in a specific selection of schools, which are part of the treatment group. This treatment is uniform for all students in the centers chosen for the treatment group, regardless of their study pathway, area of specialization, or educational level. On the other hand, the students at the schools not participating in the treatment did not receive any intervention, acting, as well as the control group. **Figure 3** Summarize the intervention scheme.

Figure 3: Intervention scheme



The treatment revolves around two primary components: the establishment of entrepreneurship classrooms within Vocational Training educational centers and the integration of entrepreneurship topics into regular class hours. These designated classrooms or workspaces are newly created, with implementation in educational centers either in the planning phase or at a very early stage of organization. This timing allows the project to align strategically within an opportune temporal and organizational framework for piloting methodologies and management proposals to facilitate its implementation.

The eMprende program by Ayuda en Acción seeks to enhance the technical skills and curricular content of the basic, intermediate, and advanced Vocational Training degrees with a dedicated employability and entrepreneurship plan. This initiative provides students with additional tools to access the workforce and/or achieve educational qualifications tailored to their professional aspirations.

This model adopts a comprehensive intervention approach focused on fostering employability skills and entrepreneurial culture, combining four key components:

- The development and strengthening of **soft skills or skills based on values and experiences**, together with the development of digital skills. This approach is integrated with the activities

already implemented in the school, improving, and complementing current practices in this area.

- The development of **initiatives and experiences** to promote cooperation between the school and the company, essential to facilitate the generation of learning, innovation, and socio-economic development to boost motivation in students to continue training and have a vision of the future in terms of employment and entrepreneurship. This collaboration includes workshops, visits to companies and events in the sector, meetings, talks, *webinars*, and inspirational testimonies from professionals, but also the identification and support of technical and financial resources necessary to promote and make the initiatives and projects created by young people a reality.
- The development of **projects based on experience**, which allow them to establish relationships with the community and with the reality that surrounds the students, through which they identify a need or an aspect that can be improved in their environment, in their community, and plan, organize and develop a project to respond to it.
- Psychosocial **support** in the field of vocational and professional guidance, to accompany each young person who participates in the program in their personal development process and in their individualized itinerary of employability and entrepreneurship.

The employability and entrepreneurship itineraries are structured around the following areas:

Vocational and career guidance

Vocational and professional guidance provides comprehensive support to participants, both individually and in groups, addressing educational, psychological, and social aspects. This involves interventions to explore participants' personal and vocational development, problem-solving, decision-making, and managing emotions and expectations. The main goal is to strengthen participants' autonomy, self-confidence, and social skills, assisting them in designing an educational and professional project that aligns with environmental opportunities, encouraging their initiative and decreasing the chances of dropping out of school.

Acquisition of key competencies

This area focuses on the development of essential skills for the successful transition from education to the world of work. Three types of competencies are addressed: Soft Vocational Skills, which are transversal skills that strengthen the entrepreneurial character and promote the autonomy, confidence and employability of the participants; entrepreneurship competencies, which include a sense of initiative, an entrepreneurial spirit, and the ability to recognize opportunities, organize ideas, and make decisions; and digital competences, which refer to the creative, critical and confident use of information and communication technologies to achieve work, employability and learning objectives.

This phase aims to influence several personal and professional dimensions, including autonomy, confidence, security, proactivity, planning, and teamwork. Additionally, it seeks to encourage entrepreneurship as a viable option during the transition from education to the workforce and to narrow the digital divide among participants.

Espacio MAKER "*Learning by doing*"

The MAKER Space "Learning by Doing" is designed for students to apply their employability and entrepreneurship skills to meet socio-economic needs. This phase includes developing initiatives or prototypes to address specific community needs. An entrepreneurship and transformation laboratory guides participants through a process that ranges from the identification of needs in the community to the implementation of concrete solutions. Initially, a community study is conducted to comprehensively grasp local needs and inform decision-making. Subsequently, teams are formed to simulate project management aimed at addressing the identified local issue. Following this, teams proceed to design and develop prototypes or initiatives. Finally, the prototypes are implemented locally or disseminated to create impact and visibility in the socio-labor environment.

This service is designed to enhance participants' key competencies while simultaneously addressing the needs of their environment. It aims to blend these needs with the development of entrepreneurial initiatives. It also seeks to increase the planning and management capacities of self-employment initiatives, with the aspiration of turning students into agents of change in their local communities.

Network of partners and articulation with the environment

The network of partners and community engagement aims to build a connection between students and the job market, encouraging collaboration and forming partnerships to enhance socio-economic development within the educational community. This is accomplished through coordinated efforts, including identifying entrepreneurial opportunities, fostering the exchange of local economic experiences, establishing a network of partners through strategic alliances, and advocating for sustainable business practices. These initiatives aim to enhance the educational journey, facilitate participants' transition into the workforce, and promote a culture of responsible entrepreneurship.

The service aims to enhance students' interaction with their socio-labor environment, preparing them for the demands of the job market and fostering community development. Additionally, it seeks to establish a collaborative relationship between partnering stakeholders and the entrepreneurship classroom, ensuring mutual benefits. Furthermore, it envisions opportunities for students' initiatives and prototypes to scale up within their environment over time.

3 Evaluation design

This section describes the design of the impact assessment of the projects described in the previous section. The section describes the Theory of Change, which identifies the mechanisms and aspects to measure, the hypotheses to test in the evaluation, the sources of information to build the indicators, the indicators, and the design of the experiment.

3.1 Theory of Change

This report, with the aim to design an evaluation that enables us to understand the causal relationship between the intervention and its final objective, develops a Theory of Change. The Theory of Change makes it possible to schematize the relationship between the needs identified in the target population, the benefits, or services that the intervention provides, and the immediate and medium-long term results sought by the intervention, understanding the relationships between them, the assumptions on which they rest, and outlining measures or outcome indicators.

Theory of Change

A Theory of Change begins with the correct identification of the needs or problems to be addressed and their underlying causes. This situational analysis should guide the design of the intervention, i.e., the activities or products that are provided to alleviate or resolve the needs, as well as the processes necessary to properly implement the treatment. Next, this theory identifies the expected effects based on the initial hypothesis, i.e., what changes – in behavior, expectations, or knowledge – are expected to be obtained in the short term with the actions conducted. Finally, the process concludes with the definition of the medium- to long-term results that the intervention aims to achieve. Sometimes, the effects directly obtained with the actions are identified as intermediate results, and one identifies the indirect effects in the final results.

The development of a Theory of Change is a fundamental element of impact evaluation. At the design stage, the Theory of Change helps to formulate hypotheses and identify the indicators needed for the measurement of results. Once the results are achieved, the Theory of Change makes it easier, if results are not as expected, to detect which part of the hypothetical causal chain failed, as well as to identify, in case of positive results, the mechanisms through which the program works. Likewise, the identification of the mechanisms that made the expected change possible allows a greater understanding of the possible generalization or not of the results to different contexts.

Within this framework, the Theory of Change emerges as a vital instrument to steer this initiative tackling early school dropout, absenteeism, and the hurdles in labor market integration faced by Spanish youth, especially in underprivileged regions. Such disparity in early dropout rates leads to diminished job prospects and perpetuates a cycle of social exclusion.

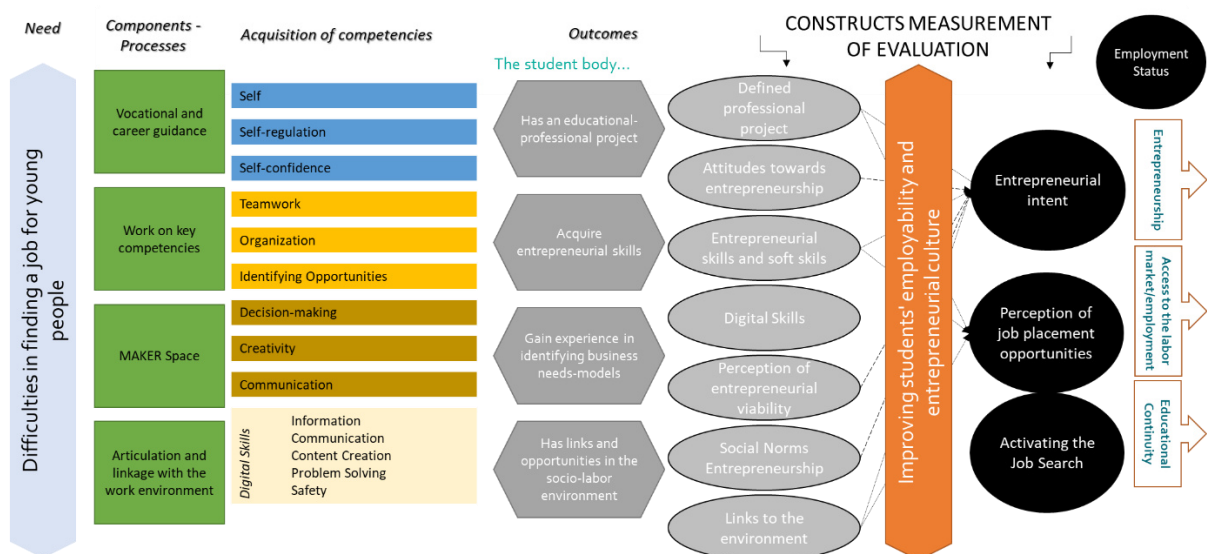
In response to this challenge, Ayuda en Acción's proposed employability and entrepreneurship itinerary seeks to initiate a ripple effect, utilizing resources and actions as pathways to generate substantial impacts about students in the participating vocational training centers. To attain this goal, an itinerary is introduced, comprising diverse lines of work in the establishment of an entrepreneurship classroom. This initiative encompasses a range of measures, including providing vocational and professional guidance to students, equipping them with essential competencies like Soft Vocational Skills, entrepreneurial skills, and digital proficiency, facilitating the development of

entrepreneurial projects targeting local needs through approaches like the MAKER Space, and implementing strategies to foster connections between students and their work environment.

All these resources and activities result in a series of outputs. By measuring the outputs, it is possible to identify whether the beneficiaries have received the activities or inputs and to what extent. The program's success relies heavily on the effective allocation and utilization of resources. If beneficiaries do not effectively receive the program, it is difficult to observe improvements in the indicators of employment, residential status, or quality of life. Within the framework of this project, the products are students with an educational-professional project, students who acquire entrepreneurial skills, students who gain experience in identifying business model needs and those who have links and opportunities in the socio-labor environment. Thus, for example, vocational and professional guidance seeks to help students define a professional project. Without the receipt of these products or benefits, there can be no hope of improvement in the situation of the beneficiaries.

This strategy is expected to result in a substantial improvement in the employability and entrepreneurial spirit of the participating students, with the consequent reduction in the dropout rate and wider access to the labor market after training, increasing the perception of job placement opportunities and activation in the search for employment.

Figure 4: Theory of Change: Digital training and personalized support



3.2 Hypothesis

The main objective of the project is to improve the employability and entrepreneurship conditions of young people at risk of social exclusion enrolled in vocational training centers, allowing greater opportunities for educational continuity and insertion into their work environment. The following are the hypotheses to be tested in relation to the expected results of the Theory of Change:

Improved entrepreneurial intention

The main hypothesis that is sought to be tested is that the eMprende itinerary improves the entrepreneurial intention of the young people who participate in the program.

Improved job integration and activation

Two main hypotheses are formulated. The first suggests that the program improves activation in the job search, while the second hypothesis proposes that the treatment increases labor insertion. It is also proposed as a secondary hypothesis that the program improves job search skills.

Improved success after the program

It is hypothesized that the interventions implemented increase success after the program, defining success as whether students continue studying or obtain a job.

Improvement employment perspective and opportunities

Finally, it is hypothesized that the treatment improves the prospects of employment opportunities, the perception of employability and the competencies of the participants.

3.3 Sources of information

The data source used to construct the outcome indicators is a survey administered to all students enrolled in the schools participating in the project in the 2022-2023 academic year. The design of the survey and the collection of data is carried out by Ayuda en Acción in collaboration with a consulting company specialized in impact studies. Prior to surveying the participants, a pilot study was conducted involving 63 vocational training students not enrolled in the project. The aim was to assess the information collection dynamics and questionnaire functionality, identify questions that were difficult to understand, gather data to test the scales used to construct indices, and modify or remove redundant or irrelevant questions.

The content of the survey and the collection process at baseline (before the intervention) and final online (after the intervention) was as follows:

- Job prospects survey among Vocational Training students:** A digital survey is implemented targeting the participants. This survey, which is voluntary for students, is conducted at two points: one prior to the intervention and another post-intervention (4-6 months after the conclusion of the treatment). The initial survey was administered in group sessions in each school in the sample, with supervision by the evaluation team and access to computer equipment for its completion. The survey includes questions about personal data, details of the educational center and vocational training cycle, as well as aspects related to job preparedness, job search, work experiences, entrepreneurial skills, and socio-economic situation. The survey also included inquiries about participants' willingness to engage in entrepreneurship, their perceptions of family income, and demographic details. The post-intervention data collection was implemented through a personalized link to the participant

with a view to collecting the appropriate information both from students who remained studying in the reference educational centers, and from the participant who graduated and therefore not accessible in the centers. To this end, a system of incentives and reminders was implemented with the aim of ensuring a maximum post-response rate. The post-questionnaire addressed in the same way as the pre-questionnaire the focal change analysis elements attributed to the program, except for the demographic data that were already obtained in the pre-program and adding the collection of data on their current post-program situation related to the educational and/or work context in which the participant found himself 6 months after the end of the program.

In addition, apart from the impact assessment included in this report, a qualitative analysis of the contribution and an explanatory analysis of the causes and conditioning factors of the changes identified have been carried out. To this end, at least 6 case studies are formed, where a qualitative data collection will be developed for all the actors in the educational centers and the environment. This analysis includes structured interviews, group dynamics, and observation. The result of this analysis is not included in this report.

3.4 Indicators

This section describes the indicators used for the evaluation of the impact of the pathway, divided by themes related to the hypotheses described above.

Entrepreneurial intention

It is considered one primary indicator and three secondary indicators, all of which are composite indices.

Main Indicator:

- **Business intention:** Synthetic indicator generated from responses to four survey questions. The responses capture the level of agreement of the participants with statements related to professional goals, dedication to entrepreneurship and the intention to establish a business in the future, which includes their willingness to take advantage of identified opportunities. Each response is rated from 0 to 6, with 0 strongly disagreeing and 6 strongly agreeing. The value of each answer is aggregated so that the indicator has a range of 0 to 24.

Secondary indicators:

- **Entrepreneurial attitude:** Synthetic indicator created from responses to four survey questions. The responses capture the level of agreement of the participants with statements related to the attraction to an entrepreneurial career, the interest in creating a business, and the satisfaction of having their own entrepreneurship. Each response is rated from 0 to 6, with 0 strongly disagreeing and 6 strongly agreeing. The value of each answer is aggregated so that the indicator has a range of 0 to 24.

- **Business behavior suitability:** Synthetic indicator produced from responses to four survey questions. The responses capture participants' level of agreement with statements related to students' perceived willingness to start a business. Each response is rated from 0 to 6, with 0 strongly disagreeing and 6 strongly agreeing. The value of each answer is aggregated so that the indicator has a range of 0 to 24.
- **Social acceptance perception:** Synthetic indicator produced from responses to four survey questions. The responses capture participants' level of agreement with statements that examine the extent to which family, friends, and the community at large support their entrepreneurial aspirations. Each answer is rated from 0 to 6, where 0 indicates complete rejection of the undertaking by the environment and 6 indicates complete approval. The value of each answer is aggregated so that the indicator has a range of 0 to 24.

For the construction of the scales of entrepreneurial intention, attitudes, behavioral control and social norms, the study by Torne and Suarez (2019) and that of Contreras and Macías Álvarez (2021) were consulted.

Job integration and activation

Two primary and two secondary indicators are considered.

Key indicators:

- **Active job search:** indicator that assesses students' intention to seek employment in the next 3 months and the effort they plan to invest in the job search. Its scale ranges from 0 to 4, where 0 indicates the absence of intention to look for a job and 4 represents an active and dedicated search, willing to invest all the necessary time.
- **Employment status:** a binary indicator that takes the value 0 if the person does not have a job and 1 if he or she does.

Secondary indicators:

- **BAE Index – job search skills:** Synthetic indicator calculated from 11 questions that evaluate the specific skills and resources that students possess for the job search. Each response is scored 0 if the respondent indicates that they do not possess the skill or resource, 1 if they are unsure, and 2 if they confirm that they do. These scores are added together to get a value ranging from 0 to 22.
- **Perceived job search ability:** indicator that explores participants' subjective perception of readiness to seek employment on a scale of 1 to 10, where 1 is not at all prepared and 10 is fully prepared.

Success after the program

It is considered a primary indicator (success status) and a secondary indicator (dropping out of school).

Success situation: this indicator takes the value of 1 if the participant continues his/her studies and/or gets a job, and 0 if he/she does not.

Dropping out of school: this indicator takes a value of 1 if participants drop out of their vocational training and 0 if they continue it.

Employment perspective and opportunities

Two main indicators are considered: perception of employability and index of entrepreneurial skills. The three sub-components of the latter, together with the indicator of awareness of the work project, constitute the four secondary indicators.

Employability perception: indicator composed of seven responses that capture the level of agreement of the participants with statements related to students' perception of job prospects and their ability to integrate into the labor market. Each response is rated from 0 to 6, with 0 strongly disagreeing and 6 strongly agreeing. The value of each answer is aggregated so that the indicator has a range from 0 to 42.

Entrepreneurial competences Index: A synthetic indicator that is calculated as an average of the following three sub-indices:

- **Entrepreneurial Competencies Sub-Index A:** focuses on participants' ability to identify ideas and opportunities. Average between questions with a range of 0 to 4, where 0 means "Not relevant to me" and 4 means "Totally relevant to me".
- **Entrepreneurial Competencies Sub-Index B:** focuses on the resources and skills of both personal and entrepreneurial participants. It is calculated as the average between questions with a range of 0 to 4, where 0 means "Not relevant to me" and 4 means "Totally relevant to me".
- **Entrepreneurial Competencies Sub-Index C:** Explores students' organizational, problem-solving, and communication skills. Average between questions with a range of 0 to 4, where 0 means "Not relevant to me" and 4 means "Totally relevant to me".

Work Project Awareness: Synthetic indicator generated from six responses that capture the level of agreement of the participants with statements that explore whether the students have a clear professional vision. Each response is rated from 0 to 6, with 0 strongly disagreeing and 6 strongly agreeing. The value of each answer is aggregated so that the indicator has a range from 0 to 36.

For the self-perception of employability scale, Martínez-Rueda, Yrresbasco, & Pérez (2021) were taken as a reference. Finally, for the scale of entrepreneurship competencies, the following main sources were consulted: EntreComp Europee (2020) and García Pérez de Lema (2012).

3.5 Design of the experiment

To assess the effect of the pathway on the indicators listed above, an experimental assessment (RCT) is used in which participants are randomly assigned between the treatment and control groups. The process of recruiting and selecting the beneficiaries of the intervention, as well as the random assignment and time frame of the experiment, is detailed below.

Design of the experiment in Extremadura

In the case of Extremadura, there has been a collaboration agreement with the Ministry of Education that has allowed the participation of all public vocational training centers. The process of recruiting centers for the study is carried out in two steps or stages to establish the study's reference universe (initial population). Initially, disadvantaged areas are categorized through the analysis of indicators based on the AROPE index, using regional plans and strategies as a reference. The categorization process seeks to identify regions with a pronounced risk of severe poverty and/or social exclusion. This process enables the identification of vocational training establishments associated with the identified disadvantaged areas. Finally, the universe of educational centers is defined based on the following criteria:

- Reference vocational training centers (geographical location and areas of influence) in each of the disadvantaged areas identified.
- Vocational training centers of special complexity and/or CAEPs (preferential educational care centers), and the sphere of influence of the census tract of the corresponding disadvantaged area.
- Vocational training centers that assume, with explicit data, a significant percentage of students in a situation of socio-educational disadvantage (regardless of whether they are in disadvantaged areas).

This process delimits a universe of schools in disadvantaged areas or with preferential attention to students in a situation of socio-educational disadvantage, made up of an initial estimate of 68 schools in the Autonomous Community of Extremadura.

To address the heterogeneity of the population and ensure the capacity of Ayuda en Acción to serve the centers, a stratification of the universe of selectable centers is carried out according to their size. This strategy allows for the establishment of appropriate intervention capacity by categorizing the centers into three distinct categories:

- Large schools (more than 1,000 students): need 2 counsellors
- Medium-sized schools (between 100 and 1000 students): need 1 counsellor
- Small schools (less than 100 students): 1 counsellor can attend two schools

Furthermore, since the size of the universe is small, centers are paired to try to ensure that the treatment group and the control group are similar in the observable characteristics available before randomization. The aim of this measure is to ensure that the schools that are going to participate in the program are as similar as possible (in observable characteristics) to those that are going to act as a comparison group. The following criteria are used to establish the pairs, in order of priority:

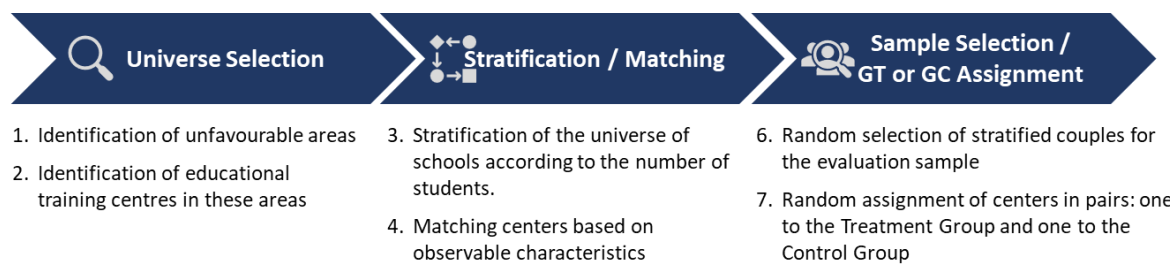
1. The presence of entrepreneurship classroom: it was considered essential, given the influence on the program, that the centers already had this space or not at the starting point.
2. Classroom coordinator with competencies and motivation: it was assessed that the existing capacities in the school and the motivation towards the Program can imply substantial differences in the development and results of the Program.

3. Strategically aligned and motivated counsellors: ditto of the previous criterion.
4. Grades/levels: Basic, Intermediate and Higher: the expected results of the Program may vary depending on the level of education studied.
5. Average dropout rates: to ensure that the figures did not show large differences, this criterion was used as eligibility.
6. Professional families of the training offer: it was sought, although it was very complex, that certain families had in common.

After identifying the pairs of centers, 15 pairs are randomly selected to participate in the project. The justification for the sample size is based on the commitment of the Ministry of Education to intervene in a minimum number of centers and, on the capacity of Ayuda en Acción to execute the proposed itinerary in a timely manner, complying with the requirements of time and form.

Finally, through a random assignment process, one of the centers of each pair is assigned to the treatment group and the other one to the control group. The figure below summarizes the randomization process implemented in Extremadura.

Figure 5: Design experiment in Extremadura



As a result of this process, the design anticipates an estimated total of between 2,500 and 4,000 students enrolled in the educational centers of the sample, evenly distributed between the treatment and control groups.

Design of the experiment in Galicia and Andalusia

In the Autonomous Communities of Galicia and Andalusia, where comprehensive data on all centers is unavailable and collaboration from the Ministry of Education is lacking, a group of 15 centers (11 in Andalusia and 10 in Galicia) identified as vulnerable and willing to participate in the experiment has been selected to take part in the study. The random assignment process ensures that 5 centers in Andalusia and 5 in Galicia are assigned to the treatment group.

Again, to ensure similarities in observable characteristics between the treatment and control groups before project execution, center matching is conducted in each of the two communities. This matching is based on information provided by Ayuda en Acción regarding the following variables:

- Number of students in the course
- Number of professional families taught
- Number of training cycles taught

- Existence of an entrepreneurship classroom
- Abandonment rate

In the case of Andalusia, due to the absence of data on the number of students in three schools, it has been decided to randomly assign one of them to the treatment group, reserving the other two for the control group. The rest of the centers are matched initially considering the number of students in the 2021-2022 academic year (classified between centers with fewer than 100 students and centers with 100 or more), and then applying the other criteria in the following order: number of training cycles, presence of an entrepreneurship classroom, dropout rate and number of professional families taught. Subsequently, one center of the couple is randomly assigned to the treatment group and another to the control group.

In Galicia, given that the data on the number of students in the 2021-2022 academic year are only available for two of the centers, it has been decided to use the information on the number of students enrolled in the 2022-2023 academic year. This variable is used as the main criterion to match the centers. Additional variables, such as the number of professional families taught, the existence of an entrepreneurship classroom and the number of training cycles taught, have been applied in that order, depending on their availability. After matching the different centers, the random assignment process is carried out, designating one center from each pair to the treatment group and the other to the control group.

4 Description of the implementation of the intervention

This section describes the practical aspects of how the intervention was implemented as part of the evaluation design. It describes the results of the participant recruitment process and other relevant logistical aspects to contextualize the results of the evaluation.

4.1 Sample Description

As previously explained, recruitment was conducted through vocational training centers. In Extremadura, a collaboration agreement with the Ministry of Education enabled participation from all public vocational training centers, resulting in a selection of 30 centers for the sample. In Galicia and Andalusia, recruitment was direct among interested centers, with 21 centers selected: 11 in Andalusia and 10 in Galicia. In Andalusia, three centers declined to participate after randomization results were revealed, leading to their exclusion from the study. Consequently, the final sample included 18 centers from Andalusia and Galicia, in addition to the 30 centers from Extremadura.

Once a center is assigned to either the treatment group or the control group, all students enrolled during the 2022-2023 academic year automatically become participants in the project. The project is integrated into the center's curriculum, so student consent is not required for participation.

Characteristics of the final evaluation sample

For all regions included in this study, the student was considered as the unit of analysis. **Table 1** provides a detailed summary of participants' sociodemographic characteristics and intervention outcome indicators at baseline, covering measures of entrepreneurial intention, labor integration, activation, employment prospects, and opportunities. The table consists of six columns, including the variable name, mean, standard deviation, minimum value, maximum value, and number of observations.

On average, participants were 19 years old¹⁰, with 38% female, 60% male, and 1% non-binary. The majority (96%) had Spanish nationality. Geographically, 11% came from Andalusia, 67% from Extremadura and 21% from Galicia. In terms of academic degree, 39% were enrolled in the second year¹¹. The distribution of students at different levels of vocational training revealed that 18% were in basic vocational training (FPB), 46% intermediate vocational training (FPM) and 36% higher vocational training (FPS).

Notably, 7% of the subjects had experienced social or material deprivation prior to the intervention. This deprivation risk was assessed through a set of nine variables pertaining to the subjects' living conditions and household circumstances, including the ability to maintain a comfortable home temperature, afford vacations, handle unforeseen expenses, and maintain a balanced diet.

Regarding the variable of professional experience, which ranges from 0 to 6, where 0 indicates no professional experience, and 6 represents more than 3 years of professional experience, the table indicates that, on average, respondents had six months to one year of work experience. About 70% of the participants were exclusively studying, while the rest combined their studies with different activities such as participation in internships, job search, participation in family businesses, self-employment, or informal work.

Table 1 also includes the pre-intervention values of the indicators described in **section 0**.

Regarding the indicators related to entrepreneurial intention, whose value ranges from 0 to 24, an average of 16 is observed for entrepreneurial intention and entrepreneurial attitude, 12 for business behavior suitability, and 17 for the social acceptance perception.

The indicators of integration and activation of the labor market show that, on average, participants score close to 1 out of a maximum of 3 in the active job search. In addition, 18% of students said they were employed at the time of the survey. In addition, the perceived job search skill scored an average

¹⁰ 10% of the sample is over 25 years old. This is because vocational training is open to any adult.

¹¹ In Spain, each vocational training cycle has a maximum duration of two years to complete.

of around 7 out of 10, and the BAE index, which ranges from 0 to 22, recorded an average score of 6.4.

The employability perception indicator has an average score of 27 out of a maximum of 42, while the employment project awareness indicator has an average score of 31 out of 36. On the other hand, the indicators of entrepreneurial competencies have an average of approximately 3, with a range between 0 and 4.

Table 1: Descriptive statistics of the sample

Variable	Obs.	Mean	Standard deviation	Minimal	Maximum
<i>Sociodemographic variables (pre-intervention)</i>					
Male	3,823	0.60	0.49	0	1
Female	3,823	0.38	0.49	0	1
Nonbinary	3,823	0.01	0.12	0	1
Age	3,802	19.79	5.82	14	65
Spanish citizenship	3,734	0.96	0.2	0	1
Andalucía	3,823	0.11	0.32	0	1
Extremadura	3,823	0.67	0.47	0	1
Galicia	3,823	0.21	0.41	0	1
Second year	3,811	0.39	0.49	0	1
Basic Professional Education	3,804	0.18	0.38	0	1
Intermediate Professional Education	3,804	0.46	0.5	0	1
Higher Professional Education	3,804	0.36	0.48	0	1
Social or material deprivation	3,743	0.07	0.25	0	1
Professional experience	3,820	1.68	2.08	0	6
Study	3,811	0.70	0.46	0	1
Study & curricular internship	3,811	0.03	0.17	0	1
Study & non-curricular internship	3,811	0.01	0.09	0	1
Study & looking for a job	3,811	0.08	0.27	0	1
Study & working in family business	3,811	0.05	0.23	0	1
Study & employed by a company	3,811	0.06	0.24	0	1
Study & self-employed	3,811	0.01	0.12	0	1
Study & informal work	3,811	0.05	0.23	0	1
<i>Outcome indicators (pre-intervention)</i>					
Business intention	3,780	15.94	5.82	0	24
Entrepreneurial attitude	3,780	15.74	5.85	0	24
Business behavior suitability	3,780	12.23	5.66	0	24

Variable	Obs.	Mean	Standard deviation	Minimal	Maximum
Social acceptance perception	3,780	17.16	4.4	0	24
<i>Outcome indicators (pre-intervention)</i>					
Active job search	3,754	0.99	1.03	0	3
Employment status	3,811	0.18	0.39	0	1
Perceived job search ability	3,754	7.06	2.02	1	10
BAE index - job search skills	3,754	6.41	5.31	0	22
<i>Outcome indicators (pre-intervention)</i>					
Employability perception	3,804	31.6	5.58	0	42
Digital competences index	3,766	2.93	0.59	0	4
Work project awareness	3,791	27.44	5.97	0	36
Digital competences subindex A	3,771	2.93	0.64	0	4
Digital competences subindex B	3,771	2.89	0.68	0	4
Digital competences subindex C	3,766	2.96	0.64	0	4

4.2 Random Assignment Results

Once the participating centers were selected, they were randomly assigned to either the control group or the treatment group, as explained in **section 0**. **Table 2** presents the results of the randomization process, detailing the number of students or observation units from each region assigned to each group.

Table 2: Random Assignment Results

Entities	Sample (Centers)	Sample (People)	TG (Centers)	TG (People)	CG (Centers)	CG (People)
TOTAL	51	5,727	25	3,032	26	2,695
Extremadura	30	3,257	15	1,596	15	1,661
Galicia	10	1,069	5	757	5	312
Andalusia	11	1,401	5	679	6	722

To assess the comparability of the treatment and control groups, balance tests are performed on the variables described above, which were collected during the initial survey. **Table 3** reports the test balance between the control group and the treatment group. All the data reflected in this table refer to the survey conducted prior to the intervention. The mean value of each variable is reported for both groups, as well as the number of observations in each group and the p-value resulting from a mean difference contrast (using the Student's t-statistic, which is not reported for reasons of space), and which includes the randomization layers as additional controls. The lower the p-value, the more confidently one can reject the hypothesis that the mean of the variable in both groups is equal. For example, if the p-value is less than 0.05, the hypothesis of equality of means can be rejected at a 5% confidence level. The standard errors are grouped at center level, to correct for possible correlations

of the treatment with observations coming from the same center. If they were not grouped together, the standard errors would be skewed downwards, and the equilibrium tests would show more imbalances than the "real" ones.

Table 3 displays the balance tests for socio-demographic covariates, showcasing that, for the most part, the treatment and control groups exhibit no statistically significant differences in these variables. However, a few exceptions warrant mention. However, a few exceptions warrant mention. A slight, yet statistically significant, distinction is observed between the two groups in the proportions of subjects currently studying with a non-curricular internship ($p < 0.05$) and subjects concurrently studying while engaged in informal work ($p < 0.01$). It's worth noting that these differences, while statistically significant, are minimal in magnitude. **Table 3** also reveals the balance tests for the outcome variables. Encouragingly, our analysis demonstrates no statistically significant differences between the treatment and control groups across these outcome variables, indicating a high degree of balance.

Overall, the balance tests illustrate that the treatment and control groups are well-matched, with any observed differences being statistically negligible. This balanced distribution of covariates enhances the credibility of our subsequent analyses and strengthens the validity of our study's findings.

Table 3. Random Assignment Results

Variable	(1) Control		(2) Treatment		(2) - (1) Pairwise t-test	
	Obs.	Mean/(Var)	Obs.	Mean/(Var)	Obs.	P-value
Male	2,023 25	0.58 (20.52)	1,800 24	0.63 (18.28)	3,823 49	0.52
Female	2,023 25	0.41 20.35	1,800 24	0.35 (17.91)	3,823 49	0.47
Nonbinary	2,023 25	0.01 (0.95)	1,800 24	0.02 (1.32)	3,823 49	0.24
Age	2,007 25	19.97 (3,210.26)	1,795 24	19.59 (2,244.9)	3,802 49	0.5
Spanish citizenship	1,980 25	0.96 (3.43)	1,754 24	0.96 (3.12)	3,734 49	0.94
Andalusia	2,023 25	0.08 (6.1)	1,800 24	0.15 (9.95)	3,823 49	0.46
Extremadura	2,023 25	0.69 (18)	1,800 24	0.66 (17.64)	3,823 49	0.83
Galicia	2,023 25	0.23 (14.94)	1,800 24	0.19 (12.23)	3,823 49	0.79
Second year	2,017 25	0.4 (20.15)	1,794 24	0.39 (18.52)	3,811 49	0.59
Basic Professional Education	2,010	0.17	1,794	0.18	3,804	0.79

Variable	(1) Control		(2) Treatment		(2) - (1) Pairwise t-test	
	Obs.	Mean/(Var)	Obs.	Mean/(Var)	Obs.	P-value
	24	(12.34)	24	(11.68)	48	
Intermediate Professional Education	2,010	0.49	1,794	0.43	3,804	0.36
	24	(21.84)	24	(19.09)	48	
Higher Professional Education	2,010	0.34	1,794	0.39	3,804	0.47
	24	(19.56)	24	(18.54)	48	
Social or material deprivation	1,983	0.08	1,760	0.06	3,743	0.25
	25	(5.78)	24	(4.52)	49	
Professional experience	2,023	1.71	1,797	1.64	3,820	0.61
	25	(373.57)	24	(325.36)	49	
Study	2,017	0.69	1,794	0.71	3,811	0.5
	25	(18)	24	(16.09)	49	
Study & curricular internship	2,017	0.03	1,794	0.02	3,811	0.47
	25	(2.7)	24	(1.82)	49	
Study & non-curricular internship	2,017	0.01	1,794	0.01	3,811	0.05**
	25	(0.91)	24	(0.43)	49	
Study & looking for a job	2,017	0.08	1,794	0.08	3,811	0.67
	25	(6)	24	(5.87)	49	
Study & working in family business	2,017	0.05	1,794	0.06	3,811	0.26
	25	(3.77)	24	(4.49)	49	
Study & employed by a company	2,017	0.06	1,794	0.06	3,811	0.86
	25	(5.03)	24	(4.35)	49	
Study & self-employed	2,017	0.01	1,794	0.01	3,811	0.99
	25	(1.15)	24	(1.07)	49	
Study & informal work	2,017	0.06	1,794	0.04	3,811	0.00***
	25	(5.07)	24	(3.16)	49	
Business intention	2,004	15.94	1,776	15.95	3,780	0.99
	25	(2,829.03)	24	(2,618.45)	49	
Entrepreneurial attitude	2,004	15.7	1,776	15.78	3,780	0.85
	25	(2,867.23)	24	(2,634.29)	49	
Business behavior suitability	2,004	12.35	1,776	12.08	3,780	0.51
	25	(2,725.99)	24	(2,424.78)	49	
Social acceptance perception	2,004	17.26	1,776	17.05	3,780	0.4
	25	(1,646.38)	24	(1,465.18)	49	

Variable	(1) Control		(2) Treatment		(2) - (1) Pairwise t-test	
	Obs.	Mean/(Var)	Obs.	Mean/(Var)	Obs.	P-value
Active job search	1,987	1.02	1,767	0.96	3,754	0.31
	25	(90.77)	24	(79.2)	49	
Employment status	2,017	0.19	1,794	0.18	3,811	0.64
	25	(12.9)	24	(11.49)	49	
Perceived job search ability	1,987	7.09	1,767	7.04	3,754	0.74
	25	(352.57)	24	(299.28)	49	
BAE index - job search skills	1,987	6.65	1,767	6.14	3,754	0.12
	25	(2,383.93)	24	(2,109.63)	49	
Employability perception	2,013	31.74	1,791	31.44	3,804	0.5
	25	(2,694.32)	24	(2,339)	49	
Digital competences index	1,994	2.95	1,772	2.9	3,766	0.19
	25	(29.91)	24	(25.67)	49	
Work project awareness	2,007	27.68	1,784	27.17	3,791	0.35
	25	(3,037.4)	24	(2,690.88)	49	
Digital competences subindex A	1,999	2.96	1,772	2.91	3,771	0.13
	25	(34.77)	24	(31.08)	49	
Digital competences subindex B	1,999	2.92	1,772	2.85	3,771	0.14
	25	(38.44)	24	(35.07)	49	
Digital competences subindex C	1,994	2.98	1,772	2.94	3,766	0.35
	25	(35.11)	24	(30.37)	49	

4.3 Degree of participation and attrition by groups

The informed consent group was an experimental sample that was randomly assigned to the control and treatment groups. However, both participation in the program and response to the initial and final surveys are voluntary. On the one hand, it is convenient to analyze the degree of participation in the program, since the estimation of results will refer to the effects on average of offering it, given the degree of participation. For example, if participation in treatment activities is low, the treatment and control groups will be very similar, and it will be more difficult to find an effect. On the other hand, this section tests whether the non-completion of the final survey by some of the participants reduces the comparability of the treatment and control groups after the intervention, if the response rate is different between groups or according to the demographic characteristics of the participants in each group.

Degree of participation

The primary obstacle encountered during the program's implementation was coordination difficulties, leading to the interruption of interventions in centers in Andalusia. Consequently, the eMprende

project was relocated from centers in this region, necessitating the design of an alternative itinerary and the establishment of a monitoring system for its execution. Following an evaluation of various options, an agreement was reached with the Malaga City Council to utilize an alternative venue. Subsequently, three days of group intervention were conducted, incorporating an entrepreneurship and employability fair, individual tutoring sessions, and supplementary workshops in select centers.

In contrast, in other territories, as previously noted, the eMprende project of Ayuda en Acción has undertaken a series of activities distributed across four areas of action.

In the area of Vocational Guidance, initial evaluations of students were carried out through forms, as well as face-to-face assessments by the team of counselors in the educational centers. However, the success of this activity is partial, as the number of students who completed the form was 1,183, with 908 in Extremadura, 276 in Galicia and 0 in Andalusia, out of the 2,325 planned. In addition, 960 individual tutoring sessions were organized, exceeding the 900 planned, with a total of 581 sessions in Extremadura, 357 in Galicia and 22 in Andalusia, with the aim of providing personalized accompaniment to students in their vocational and professional orientation process.

In the area of key competency acquisition, a specific training plan was developed for each educational center, focusing on digital skills, entrepreneurship, and soft vocational skills. Group work sessions were conducted, totaling 1,228 sessions in Extremadura, 638 in Galicia, and 6 in Andalusia, plus three day-long events, compared to the 2,359 sessions originally planned.

In relation to the MAKER Space "*Learning by doing*", several key activities were carried out. This included exhaustive mapping of the environment, group sessions to select ideas and design prototypes, as well as events to raise awareness of initiatives in the environment, such as fairs aimed at fostering entrepreneurship and improving employability. Of these, four were held in Galicia, eleven in Extremadura and one in Andalusia, with the participation of four centers simultaneously.

Finally, in the Network of Partners and Articulation of the Environment, 25 maps of employability and entrepreneurship in the socioeconomic environment were carried out, one for each educational center subject to the treatment. In addition, there were visits to companies, *masterclasses*, scholarship talks and meetings with former students, with a total of 94 activities in Extremadura and 40 in Galicia. Regular meetings, both face-to-face and virtual, were also established with local companies to establish collaboration links and joint work agreements were formalized.

Attrition level

The study presents a high attrition rate of 62%, as only 1469 of the 3824 students in the baseline survey answered the baseline questionnaire. To gauge whether attrition introduces bias to our estimations, it is essential to explore two key aspects: (1) whether attrition varies between the intervention groups, termed differential attrition, and (2) whether characteristics of the individuals who dropped out differ significantly between the groups, referred to as selective attrition.

To test whether the differential attrition between groups is significant, equations (1) and (2) are estimated, where the $Attrition_i$ is an indicator variable that takes value 1 if an individual i has

dropped out and 0 if has not, $Treatment_i$ is the treatment indicator and γ_i center pairs fixed effects according to the pairwise randomization. The standard errors are clustered at the center level.

$$Attrition_i = \alpha + \beta Treatment_i + \varepsilon_i \quad (1)$$

$$Attrition_i = \alpha + \beta Treatment_i + \gamma_i + \varepsilon_i \quad (2)$$

The first and second columns of Table 4 present the estimation results. Although the attrition rate in the control group is marginally higher by nearly 5%, this difference does not attain statistical significance in the initial model. However, upon incorporating strata fixed effects, a significant reduction in attrition rates within the treatment group is detected ($p < 0.05$).

Given the significant difference in attrition rates between the treatment and control groups, it is checked whether attritors in the treatment and control groups differ in any observable characteristics from baseline. The third column in **Table 4** shows the estimation results of equation (3), where X_k are observable characteristics and δ_k the parameters of interest. A significant δ_k coefficient would indicate that attritors from the control and the treatment group significantly differ in characteristics X_k .

$$Attrition_i = \alpha + \beta Treatment_i + \sum_k \beta_k X_{ik} + \sum_k \delta_k X_{ik} \times Treatment_i + \gamma_i + \varepsilon_i \quad (3)$$

This third model suggests that, overall, drop-outs from the two groups do not exhibit systematic variations in their characteristics. There are some exceptions, such as differences concerning Spanish citizenship, the autonomous community of origin, and whether they were in their first or second academic year.

Table 4: Attrition Analysis

	Attrition (1)	Attrition (2)	Attrition (3)
Treatment	-0.049	-0.060**	0
Treatment X Female			-0.271
Treatment X Male			0.232
Treatment X Nonbinary			0
Treatment X Age			0
Treatment X Spanish citizenship			-0.148**
Treatment X Basic Professional Education			-0.024
Treatment X Intermediate Professional Education			-0.022
Treatment X High Professional Education			0
Treatment X Working experience			0.002
Treatment X Extremadura			0.379*
Treatment X Galicia			0.407*
Treatment X Andalusia			0.259

	Attrition (1)	Attrition (2)	Attrition (3)
Treatment X Second Year			-0.078**
Treatment X Material Deprivation			0.001
Media de control	0.64	0.64	0.64
R-squared	0	0.02	0.07
N	3.823	3.823	3.709
Strata	No	YES	YES
Controls	No	No	YES
F-static			0.37

Note: Standard errors, grouped by school level, reported in parentheses.

Levels of significance: * p < 0.10, ** p < 0.05, *** p < 0.01.

5 Results of the evaluation

Random assignment of the experimental sample to the control and treatment groups ensures that, with a sufficiently large sample, the groups are statistically comparable and therefore any differences observed after the intervention can be causally associated with the treatment. Econometric analysis provides, in essence, this comparison. However, it has the advantages of allowing other variables to be included to gain accuracy in the estimates and of providing confidence intervals for the estimates. In this section, the econometric analysis and the estimated regressions are presented, as well as the analysis of the results obtained.

5.1 Description of the econometric analysis: estimated regressions

The regression model specified to estimate the causal effect in a randomized experiment is the difference in the average of the variable of interest between the individuals assigned to treatment and control groups after the treatment. This analysis showcases regressions where both the lagged value of the dependent variable, i.e., the value before the intervention and additional covariates¹². This serves to ensure that the differences between the treatment and control groups before the intervention are considered in the analysis. Also, adding the baseline outcome and controls in regressions when they are highly correlated with the outcome of interest improves the accuracy of the estimates, reducing their error.

Specifically, the specification of the regressions presented below is as follows:

$$Y_{i,t=1} = \alpha + \beta T_i + \gamma Y_{i,t=0} + X_i \delta + \theta \eta_i + \varepsilon_i \quad (4)$$

¹² As outcomes on the third block of outcomes, success after the program, was not possible to calculate at baseline, the estimated specification in these cases does not include the lagged value of the dependent variable.

where $Y_{i,t=1}$ is the dependent variable of interest observed after the intervention for school i , T_i indicates whether the school has been assigned to the treatment ($=1$) or control ($=0$), $Y_{i,t=0}$ is the lagged value of the dependent variable (i.e., before the intervention), X_i is a vector of controls (including gender, age, work experience, level of vocational education, course, region, Spanish nationality and indicator of social or material deprivation), η_i are fixed effects of strata (pairs of centers) and ε_i is the term of error. Standard errors were grouped at the school level.

5.2 Analysis of the results

5.2.1 Primary and secondary outcomes

Entrepreneurial intent

Table 5 presents the impact of eMprende on the variables of entrepreneurial intention that the eMprende's program significantly increased the entrepreneurial attitude by 4.5% compared to the control group -with a coefficient of 0.67. It also improved business behavior suitability by 4.68% -with a coefficient of 0.62- at $p < 0.01$. However, no significant impact on entrepreneurial intent and the perception of social acceptance is found.

Table 5: ITT (Entrepreneurial intention)

	Business intention (1)	Entrepreneurial attitude (2)	Business behavior suitability (3)	Social acceptance perception (4)
Treatment	0.33 (0.23)	0.67** (0.25)	0.62*** (0.17)	-0.21 (0.14)
Control Mean	14.83	15.02	13.22	17.37
Obs.	1,388	1,388	1,388	1,388
R ²	0,48	0,46	0,34	0,29

Note: Standard errors, grouped by school level, reported in parentheses.

Levels of significance: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Job integration and activation

Table 6 presents the results for labor integration and activation. **Table 6** shows a strong positive and significant ($p < 0.01$) effect of the program on job search skills (BAE index) of 7.81% compared to the control group and a marginal but significant and positive effect of 1.57% ($p < 0.1$) on the perceived job search ability. No significant effect was found for active job search or employment status. This means that participants in the intervention have a greater probability of acquiring better job search abilities (marginally) and better job search skills.

Table 6: ITT (Labor integration and activation)

	Active job search (1)	Employment status (2)	Perceived job search ability (3)	BAE index – job search skills (4)
Treatment	-0.07 (0.04)	0.02 (0.02)	0.11* (0.06)	0.74*** (0.22)
Control Mean	1.25	0.2	7.62	9.47
Obs.	1.443	1.450	1.359	1.359
R ²	0.11	0.25	0.32	0.42

Note: Standard errors, grouped by school level, reported in parentheses.

Levels of significance: * p < 0.10, ** p < 0.05, *** p < 0.01.

Success after the program

Table 7 shows the results for the third block of hypothesis; success after the program. For this block, two dummy outcomes have been defined: one that informs whether students gave up their vocational studies and one that indicates whether they are working or studying after the program. A main result has been found in this section, where a significant effect can be seen on whether they abandon the studies (p<0.05) and whether they are working or studying (p<0.01). In other words, the program significantly decreases the probability of giving up vocational studies by 2% and significantly increases the probability of working or studying after it by 2% compared to the control group.

Table 7 ITT (Success after the program)

	Studying or working (1)	Quitting school (2)
Treatment	0.02*** (0.01)	-0.02** (0.01)
Control Mean	0.97	0.05
Obs.	1,461	1461
R ²	0.03	0.03

Note: Standard errors, grouped by school level, reported in parentheses.

Levels of significance: * p < 0.10, ** p < 0.05, *** p < 0.01.

Employment perspective and opportunities

Table 8 presents the results corresponding to the employment perspective and opportunities hypothesis. The program shows a marginal significance in reducing students' employability perception in 1.58% compared to the control group, and significantly increased one of the three entrepreneurial competencies subindexes by 1.66%. For the rest of outcome variables (entrepreneurial competencies index, work project awareness, entrepreneurial competencies subindex A and C), no significant effect was found.

Table 8: ITT (Employment perspective and opportunities)

	Employability perception (1)	Entrepreneurial competences index (2)	Work project awareness (3)	Entrepreneurial competences subindex A (4)	Entrepreneurial competences subindex B (5)	Entrepreneurial competences subindex C (6)
Treatment	-0.52* (0.29)	0.03 (0.02)	-0.13 (0.22)	0.02 (0.02)	0.05* (0.03)	0.01 (0.02)
Control Mean	32.99	3.08	28.34	3.1	3.01	3.13
Obs.	1,429	1,367	1,415	1,376	1,376	1,367
R ²	0.34	0.42	0.36	0.29	0.38	0.36

Note: Standard errors, grouped by school level, reported in parentheses.

Levels of significance: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

5.2.2 Heterogeneity analysis

This section presents analyses of the heterogeneity of the effects according to participants' characteristics. Specifically, analyses are conducted to assess whether the effects vary by course and region. To achieve this, regressions identical to those in the previous section are specified, with the addition of the variable for which heterogeneous effects are sought and its interaction with the treatment indicator.

Tables 9, 10 and 11 show whether the intervention has a differential impact on second year participants compared to first year participants. **Tables 12, 13 and 14** present the differential impact of the intervention by region.

Heterogeneity by academic level

Table 9 reports the heterogeneous results in entrepreneurial intention outcomes by grade. The coefficient of interest in this case is that corresponding to the interaction between treatment and the binary variable indicating the year ("treatment and second year"). In none of the cases is the coefficient significantly different from zero. Therefore, it is concluded that there are no heterogeneous effects by year on the results of entrepreneurial intention.

Table 9: ITT (Entrepreneurial intention)

Variable	Business intention (1)	Entrepreneurial attitude (2)	Business behavior suitability (3)	Social acceptance perception (4)
Treatment	0.1 (0.34)	0.57 (0.38)	0.29 (0.3)	-0.33 (0.23)
Second year	0.14 (0.38)	0.34 (0.41)	0.25 (0.35)	0.15 (0.19)
Treatment*	0.55	0.24	0.76	0.29
Second year	(0.56)	(0.62)	(0.49)	(0.41)

Variable	Business intention (1)	Entrepreneurial attitude (2)	Business behavior suitability (3)	Social acceptance perception (4)
Control Mean	14.83	15.02	13.22	17.37
Obs.	1,388	1,388	1,388	1,388
R ²	0.48	0.46	0.34	0.29

Note: Standard errors, grouped by school level, reported in parentheses.

Levels of significance: * p < 0.10, ** p < 0.05, *** p < 0.01.

Heterogeneous effects for labor integration and activation outcomes can be found in Table 10. Results show that the previously reported, significant and positive effect of the program on perceived job search ability mainly arise from students in their second year: the treatment does not significantly impact the perceived job search ability of students in their first year, while it significantly increases it in 3.94% for students in their second year. Regarding the rest of outcomes, the program does not have a differential effect by year. Table 11 shows that the program did not have statistically different effects on the success outcomes for students in the first and the second year. Nor is there any difference between first- and second-year students in outcomes related to employment prospects and opportunities (Table 12).

Table 10: ITT (Labor integration and activation)

Variable	Active job search (1)	Employment status (2)	Perceived job search ability (3)	BAE index – job search skills (4)
Treatment	-0.12* (0.07)	-0 (0.02)	-0.02 (0.09)	0.52 (0.31)
Second year	0.15 (0.09)	0.12*** (0.03)	0.13 (0.13)	0.80** (0.39)
Treatment*	0.12 (0.14)	0.07 (0.04)	0.32* (0.17)	0.51 (0.54)
Control Mean	1.25	0.2	7.62	9.47
Obs.	1,443	1,450	1,359	1,359
R ²	0.11	0.25	0.32	0.42

Note: Standard errors, grouped by school level, reported in parentheses.

Levels of significance: * p < 0.10, ** p < 0.05, *** p < 0.01.

Table 11: ITT (Success after the program)

	Studying or working (1)	Quitting school (2)
Treatment	0.02* (0.01)	-0.04** (0.01)
Second year	0.03** (0.01)	-0.05** (0.02)

	Studying or working (1)	Quitting school (2)
Treatment*	-0.02	0.04
Second year	(0.02)	(0.03)
Control Mean	1.25	0.2
Obs.	1,443	1,450
R ²	0.11	0.25

Note: Standard errors, grouped by school level, reported in parentheses.

Levels of significance: * p < 0.10, ** p < 0.05, *** p < 0.01.

Table 12: ITT (Employment perspective and opportunities)

	Employability perception (1)	Entrepreneurial competences index (2)	Work project awareness (3)	Entrepreneurial competences subindex A (4)	Entrepreneurial competences subindex B (5)	Entrepreneurial competences subindex C (6)
Treatment	-0.55 (0.35)	0.02 (0.03)	-0.41 (0.3)	0.02 (0.03)	0.04 (0.04)	-0.03 (0.03)
Second year	0.56 (0.38)	0.12*** (0.02)	0.80** (0.36)	0.13*** (0.02)	0.12*** (0.03)	0.08*** (0.03)
Treatment *	0.05 (0.46)	0.03 (0.04)	0.66 (0.5)	0.01 (0.04)	0.01 (0.06)	0.08 (0.05)
Control Mean	32.99	3.08	28.34	3.1	3.01	3.13
Obs.	1.429	1.367	1.415	1.376	1.376	1.367
R ²	0.34	0.42	0.36	0.29	0.38	0.36

Note: Standard errors, grouped by school level, reported in parentheses.

Levels of significance: * p < 0.10, ** p < 0.05, *** p < 0.01.

Heterogeneity by Autonomous Community

Table 13 shows the effect of the program by region on the first block of outcome hypothesis. The intervention did not have a significant effect on entrepreneurial attitude in Andalusia and Galicia, while it had a significant and positive impact in Extremadura. For the rest of the outcomes, the effect of the program is not statistically different by region.

Table 13: ITT (Entrepreneurial intention)

	Business intention (1)	Entrepreneurial attitude (2)	Business behavior suitability (3)	Social acceptance perception (4)
Treatment	0.08 (0.53)	-0.62 (0.56)	0.35 (1.13)	-0.07 (0.31)
Extremadura	-4.9** (2.08)	-2.83* (1.67)	-4.06** (1.52)	-4.94*** (1.03)
Galicia	-0.11	-0.85	1.24	-2***

	Business intention (1)	Entrepreneurial attitude (2)	Business behavior suitability (3)	Social acceptance perception (4)
	(1.42)	(1.38)	(1.42)	(0.74)
Treatment *	-0.51	1.64**	0.56	-0.14
Extremadura	(0.59)	(0.63)	(1.14)	(0.34)
Treatment *	-0.69	0.45	-0.72	-0.16
Galicia	(0.76)	(0.79)	(1.16)	(0.51)
Control Mean	14.83	15.02	13.22	17.37
Obs.	1,388	1,388	1,388	1,388
R ²	0.48	0.46	0.34	0.29

Note: Standard errors, grouped by school level, reported in parentheses.

Levels of significance: * p < 0.10, ** p < 0.05, *** p < 0.01.

For the second block of outcomes, Table 14 shows that the intervention had different effects by region on perceived job search ability and job search skills (BAE index). In particular, the treatment had a significant and positive impact on the perceived job search ability in the three regions, although the effect was much larger in Andalusia and close to zero in Extremadura. Moreover, the program only had a significant and positive impact on job search skills in Extremadura.

Regarding career success after the program, the intervention significantly increased the probability of studying or working only in Galicia but did not have a statistically different effect on the probability of quitting school by region, as it is shown in Table 15.

Table 14: ITT (Labor integration and activation)

	Active job search (1)	Employment status (2)	Perceived job search ability (3)	BAE index – job search skills (4)
	(0.19)	(0.02)	(0.2)	(0.89)
Treatment	0.12	0.03*	0.75***	-0.63
Extremadura	(0.28)	(0.1)	(0.33)	(1.48)
Galicia	-0.28	-0.02	0.01	-1.56
	(0.28)	(0.04)	(0.26)	(1.49)
Treatment *	-0.18	-0.01	-0.72	1.66*
Extremadura	(0.2)	(0.03)	(0.2)	(0.91)
Treatment *	-0.33	-0.02	-0.59	0.76
Galicia	(0.21)	(0.06)	(0.25)	(0.97)
Control Mean	1.25	0.2	7.62	9.47
Obs.	1,443	1,450	1,359	1,359
R ²	0.11	0.25	0.32	0.42

Note: Standard errors, grouped by school level, reported in parentheses.

Levels of significance: * p < 0.10, ** p < 0.05, *** p < 0.01.

Table 15: ITT (Success after the program)

	Studying or working (1)	Quitting school (2)
Treatment	-0.03 (0.03)	-0.01 (0.04)
Extremadura	0.06 (0.04)	-0.09* (0.05)
Galicia	0.05 (0.04)	-0.08 (0.05)
Treatment *	0.04 (0.03)	0 (0.04)
Extremadura		
Treatment *	0.07* (0.04)	-0.04 (0.05)
Galicia		
Control Mean	0.97	0.05
Obs.	1,461	1,461
R ²	0.03	0.03

Note: Standard errors, grouped by school level, reported in parentheses.

Levels of significance: * p < 0.10, ** p < 0.05, *** p < 0.01.

In the fourth block of results (outlook and employment opportunities), there is a small but negative and significant effect of the program on work project awareness in Extremadura and Galicia, and a small, but positive and significant effect in Andalusia. For the rest of the outcomes, the intervention did not have a significantly different effect by Autonomous Community.

Table 16: ITT (Employment perspective and opportunities)

	Employability perception (1)	Entrepreneurial competences index (2)	Work project awareness (3)	Entrepreneurial competences subindex A (4)	Entrepreneurial competences subindex B (5)	Entrepreneurial competences subindex C (6)
Treatment	-1.05*** (0.39)	0.03 (0.06)	1.28** (0.57)	-0.04 (0.06)	0.03 (0.06)	0.05 (0.07)
Extremadura	-6.59*** (0.68)	-0.77** (0.31)	-7.13*** (1.21)	-1.15*** (0.28)	-0.55 (0.36)	-0.89*** (0.24)
Galicia	-1.67** (0.71)	-0.24** (0.10)	0.37 (1.11)	-0.33*** (0.12)	-0.19 (0.15)	-0.23*** (0.08)
Treatment *	0.57 (0.48)	0.01 (0.06)	-1.47** (0.6)	0.08 (0.07)	0.03 (0.07)	-0.03 (0.07)
Extremadura						
Treatment *	0.54 (0.82)	-0.04 (0.08)	-1.73** (0.78)	-0.01 (0.09)	-0.01 (0.09)	-0.11 (0.09)
Galicia						
Control Mean	32.99	3.08	28.34	3.1	3.01	3.13
Obs.	1,429	1,367	1,415	1,376	1,376	1,367

	Employability perception (1)	Entrepreneurial competences index (2)	Work project awareness (3)	Entrepreneurial competences subindex A (4)	Entrepreneurial competences subindex B (5)	Entrepreneurial competences subindex C (6)
R ²	0.34	0.42	0.36	0.29	0.38	0.36

Note: Standard errors, grouped by school level, reported in parentheses.

Levels of significance: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

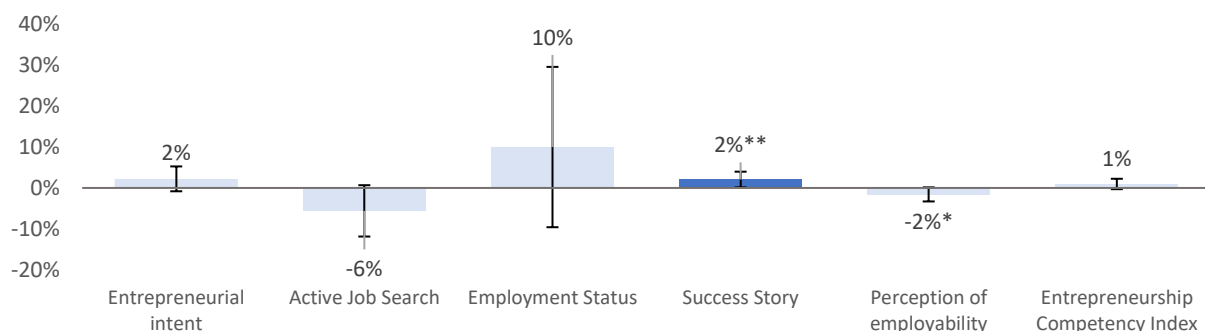
6 Conclusions of the evaluation

This pilot project has provided valuable insights into the effects of vocational and business guidance services for young individuals in socially excluded areas. The initiative specifically targeted students undergoing vocational training, strategically positioning them to enter the market.

Utilizing Randomized Controlled Trial (RCT) methodology, and employing pairwise matching randomization at the school level, our study encompassed a diverse sample of 3,824 students in 51 schools from the regions of Andalusia, Extremadura, and Galicia. Within this initial sample, 1,800 students were randomly assigned to the treatment group, while the remaining 2,023 formed the comparison group.

The study faced an attrition rate of 62%, revealing lower attrition within the treatment group ($p < 0.05$). Moreover, a thorough analysis suggested that dropouts from the control and the treatment group significantly differ in their citizenship, region, and year. Further research will explore the robustness of the results to selective attrition by calculation of Lee bounds.

Figure 6: Effect of the intervention on key indicators



Note: indicators with a significant treatment effect at 5% are presented in dark blue, 10% in blue, and non-significant indicators are presented in light blue. The effects included in the graphs refer to regressions with controls and are expressed as a percentage of the mean of the control group in the end-of-line survey.

As for the primary outcomes, the eMprende program demonstrated a modest yet positive impact on students' entrepreneurial intention and skills, as well as their labor integration, activation, and career prospects. Importantly, participation in the intervention correlated with a decreased likelihood of dropping out of vocational training, thereby increasing the odds of continued education or employment.

The analysis explored heterogeneity by year and autonomous community. Generally, effects on entrepreneurial intention outcomes did not display significant heterogeneity by study year, except for a positive and significant effect on perceived job search ability for second-year students, likely attributed to their proximity to the labor market entry.

Regarding regional heterogeneity, the results showed varying impacts by location, which may respond to differences in the implementation. The program had a significant and positive effect on entrepreneurial attitude and on job search skills only in Extremadura and a significant and positive impact on the perceived job search ability in the three regions, although the effect was much larger in Andalusia. Moreover, the intervention significantly increased the probability of studying or working only in Galicia and it had a small, but positive and significant effect on work project awareness in Andalusia.

In conclusion, projects like eMprende hold potential to facilitate the labor market entry of young individuals who are more vulnerable to social and economic exclusion. In Spain, where youth unemployment is among the highest in the European Union, fostering entrepreneurial vocations and business skills can provide a valuable alternative path to employment for this demographic group.

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Appendix

Economic and regulatory management

1. Introduction

Within the framework of the National Recovery, Transformation, and Resilience Plan, the General Secretariat for Inclusion (SGI) of the Ministry of Inclusion, Social Security, and Migration is significantly involved in Component 23, "New public policies for a dynamic, resilient, and inclusive labor market," framed in policy area VIII, "New care economy and employment policies."

Investment 7 "Promotion of Inclusive Growth by linking socio-labor inclusion policies to the Minimum Income Scheme" is one of the reforms and investments proposed in this Component 23. Investment 7 promotes the implementation of a new inclusion model based on the Minimum Income Scheme (MIS), which reduces income inequality and poverty rates. To achieve this objective, the development of pilot projects has been proposed, among others, for the implementation of social inclusion pathways with autonomous communities, local entities, and Third Sector of Social Action organizations, as well as with the different social agents.

Royal Decree 938/2021, of October 26, which regulates the direct granting of subsidies from the Ministry of Inclusion, Social Security, and Migrations in the field of social inclusion, for an amount of €109,787,404, within the framework of the Recovery, Transformation, and Resilience Plan¹³, contributed to meeting milestone 350 for the first quarter of 2022 as outlined in the Council's Implementing Decision: "Improve the rate of access to the Minimum Income Scheme, and increase the effectiveness of the MIS through inclusion policies, which, according to its description, will translate into supporting the socio-economic inclusion of the beneficiaries of the MIS through itineraries: eight collaboration agreements signed with subnational public administrations, social partners and entities of the Third Sector of Social Action to conduct the pathways. The objectives of these partnership agreements are: (i) improve the MIS access rate; ii) increase the effectiveness of the MIS through inclusion policies". Likewise, along with Royal Decree 378/2022, of May 17¹⁴, "at least 10 additional collaboration agreements signed with subnational public administrations, social partners and entities of the Third Sector of Social Action to implement pilot projects to support the socio-economic inclusion of the beneficiaries of MIS through itineraries" contributed to compliance with

¹³Royal Decree 938/2021, of October 26, regulating the direct granting of subsidies from the Ministry of Inclusion, Social Security, and Migrations in the field of social inclusion, for an amount of 109,787,404 euros, within the framework of the Recovery, Transformation, and Resilience Plan (BOE-A-2021-17464). It can be consulted at the following link: https://www.boe.es/diario_boe/txt.php?id=BOE-A-2021-17464.

¹⁴ Royal Decree 378/2022, of May 17, 2022, regulating the direct granting of subsidies from the Ministry of Inclusion, Social Security and Migration in the field of social inclusion, for an amount of 102,036,066 euros, within the framework of the Recovery, Transformation and Resilience Plan (BOE-A-2022-8124). It can be consulted at the following link: https://www.boe.es/diario_boe/txt.php?id=BOE-A-2022-8124.

monitoring indicator number 351.1 in the first quarter of 2023, linked to the Operational Arrangements document¹⁵.

Furthermore, following the execution and evaluation of each of the subsidized pilot projects, an assessment will be conducted to evaluate the coverage, effectiveness, and success of the minimum income schemes. The publication of this evaluation, which will include specific recommendations to improve the access rate to the benefit and enhance the effectiveness of social inclusion policies, contributes to the achievement of milestone 351 of the Recovery, Transformation, and Resilience Plan scheduled for the first quarter of 2024.

In accordance with Article 3 of Royal Decree 938/2021, dated October 26, subsidies will be granted through a resolution accompanied by an agreement of the head of the Ministry of Inclusion, Social Security and Migration as the competent authority for granting them, without prejudice to the existing delegations of competence in the matter, upon request by the beneficiary organizations.

On **August 31, 2022**, the entity Ayuda en Acción Foundation was notified of the Resolution of the General Secretariat for Inclusion and Social Welfare Objectives and Policies granting a subsidy amounting to 4,303,776 euros to the Ayuda en Acción Foundation and, on **September 1, 2022**, an agreement is signed between the General State Administration, through the General Secretariat for Inclusion and Social Welfare Objectives and Policies and the Ayuda en Acción Foundation, for the implementation of a social inclusion project within the framework of the Recovery, Transformation, and Resilience Plan, which was published in the "Official State Gazette" on **16 September 2022** (BOE no.223).¹⁶

2. Time frame of the intervention

Article 17(1) of Royal Decree 378/2022 of May 17, established that the execution period for the pilot projects of social inclusion itineraries subject to the subsidies provided for in this text shall not exceed the deadline of November 30, 2023, while the evaluation shall not extend beyond March 31, 2024, , in order to meet the milestones set by the Recovery, Transformation, and Resilience Plan regarding social inclusion policies.

Within this general timeframe, the implementation begins on **October 1, 2022**, with the start of the intervention itinerary, continuing the execution tasks until **September 30, 2023**, and subsequently developing only dissemination and evaluation tasks of the project until **March 31, 2024**.

3. Relevant Agents

Among the relevant agents in the implementation of the project are:

¹⁵ Decision of the European Commission approving the document 'Operational Provisions of the Recovery, Transformation and Resilience Plan', which can be consulted at the following link:
<https://www.lamoncloa.gob.es/serviciosdeprensa/notasprensa/hacienda/Documents/2021/101121-CountersignedESFirstCopy.pdf>.

¹⁶ https://www.boe.es/diario_boe/txt.php?id=BOE-A-2022-15165

- **Fundación Ayuda en Acción**, as the beneficiary entity and coordinator of the project.
- **Escuela de Conkistadores S.L.U.**, subcontracted for the design and execution of the interventions of the 'Maker Space' and the Employability and Entrepreneurship Maps.
- **Sociológica Tres**, subcontracted to support the tasks of impact assessment and validation of the proposed model.
- The **Ministry of Inclusion, Social Security and Migration (MISSM)** as the sponsor of the project, and the main responsible for the RCT evaluation process. The General Secretariat for Inclusion (SGI) assumes the following commitments:
 - a) Assist the beneficiary entity in the design of the activities to be carried out for the implementation and monitoring of the object of the grant, as well as for the profiling of the potential participants of the pilot project.
 - b) Design the randomized controlled trial (RCT) methodology of the pilot project in coordination with the beneficiary entity.
 - c) Evaluate the pilot project in coordination with the beneficiary entity.
- **CEMFI and J-PAL Europe**, as scientific and academic institutions that support MISSM in the design and RCT evaluation.