



MONITORING AND EVALUATION REPORT

MONITORING AND EVALUATION

Project 2022-ONL-00119 "Tech Your Future"

ONLIFE Call for Proposals

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1. MONITORING AND EVALUATION ACTIVITIES

The information contained in this section has been collected as part of the monitoring and evaluation activities promoted by the Institutional Activities Area of the Fondo per la Repubblica Digitale Impresa Sociale S.r.l. (Fund for the Digital Republic Social Enterprise Ltd.). The monitoring and evaluation of implementation follows the entire life cycle of the projects, from the decision to award the grant to their conclusion and the receipt of the final report. The sharing of information by the entities responsible for the projects and the analysis and systematization of data by the offices allows for an understanding of the progress of activities, verification of the achievement of expected results, both in quantitative and qualitative terms, and analysis and management of any critical issues. In particular, the main sources of data and information reported in this section are: the 'Beneficiary Forms', the documents and reporting reports submitted by the responsible party. The **Re@dy platform** plays a fundamental role in monitoring project activities, allowing for the systematic collection of information, data, and documents, as well as the verification of results achieved and expenses incurred, acting as a veritable *repository* of the Fund's institutional activities.

The evaluation activity includes various tools and actions:

- the **self-assessment form** sent periodically by the organizations responsible for the projects regarding the progress of activities, the achievement of results, the emergence of any critical issues, and the management of resources;
- **periodic evaluation** by the Institutional Activities offices, through the preparation of a specific form, concerning four specific areas of implementation: progress of project activities with respect to timelines and expected outputs; achievement of pre-established objectives and results; management and coordination between the partners; management of resources in terms of effectiveness and efficiency;
- **meetings** at the headquarters of the organizations promoting the projects and the locations where the project activities are carried out, in order to gain first-hand knowledge of the realities supported and to consolidate relationships and synergies.

The systematization of the information and data collected allows for an in-depth analysis of both the implementation aspects of the projects and the outputs achieved, resulting in the preparation of periodic monitoring reports shared with the *governance* of the Fund and the social enterprise, and in the final monitoring report at the conclusion of each project.

1.1 Project data

Responsible entity	Generation Italy ETS Foundation
Partner	
Duration	15 months
Location	National
No. of beneficiaries	328

Table 1 – General project data

Company name	Role	Amount managed (€)	%
Generation Italy ETS Foundation	Responsible entity	980,093.38	100
Total		980,093.38	100

Table 2 – Amount managed by partners

Activity	Amount (€)	
Involvement of target beneficiaries	81,328.86	8
Communication	153,065.79	15.6
Training	411,909.69	42.0
Project management	161,647.73	16.5
Monitoring	10,816.78	1.1
Placement	161,324.53	16.5
Total	980,093.38	100.0

Table 3 – Cost of project activities

1.2 Socio-demographic characteristics of beneficiaries

As regards the socio-demographic characteristics of the 328 beneficiaries, the average age is 24.2 years. Figure 1 shows the age distribution of beneficiaries.

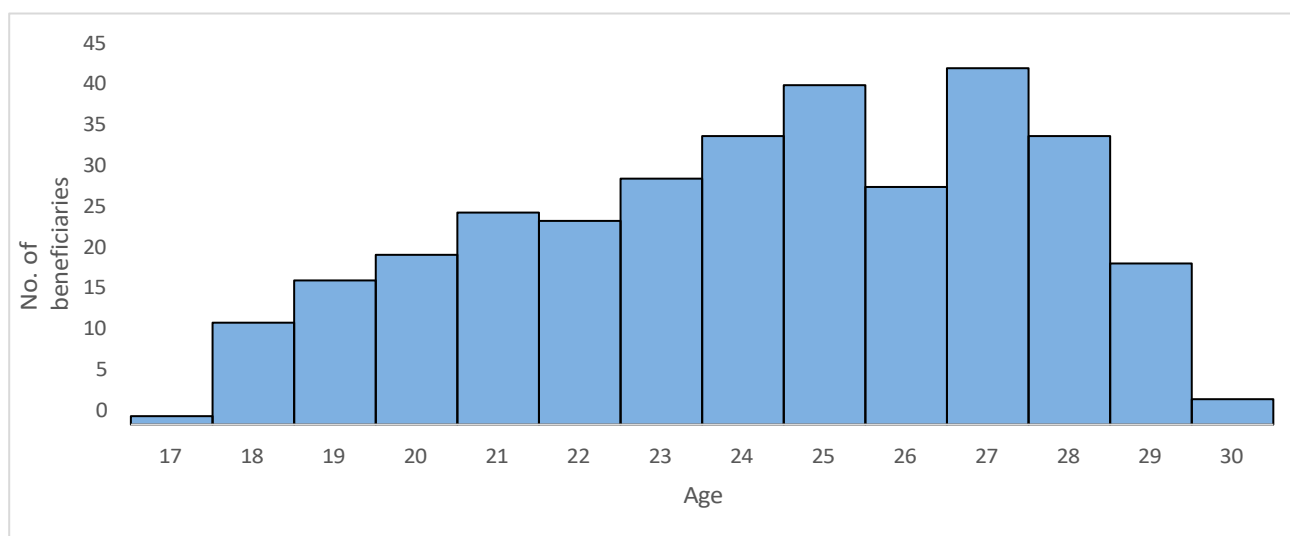


Figure 1 – Age distribution of beneficiaries

The beneficiaries come from all over Italy, but the vast majority are from Lazio (40.3%) and Campania (20.4%).

Place of residence	No. of beneficiaries	%
Abruzzo	7	2.1
Basilicata	2	0.6
Calabria	7	2.1
Campania	67	20.4
Emilia-Romagna	2	0.6
Lazio	132	40.3
Liguria	3	0.9
Lombardy	29	8.9
Marche	3	0.9
Molise	2	0.6
Piedmont	29	8.8
Apulia	13	4
Sardinia	7	2.1
Sicily	8	2.5
Tuscany	10	3.1
Trentino-Alto Adige	1	0.3
Umbria	2	0.6
Veneto	4	1.2
Total	328	100.0

Table 4 – Origin of beneficiaries, regional breakdown

Most beneficiaries have a high school diploma as their highest level of education (73.8%), while only 60 beneficiaries (18.3%) have at least a bachelor's degree (see Table 5). Most beneficiaries are male (81.7%) (see Table 6).

Highest level of education	No. of beneficiaries	%
Not available	13	4.0
Middle school	8	2.4
CPIA	2	0.6
IeFP	3	0.9
Diploma	242	73.8
Master's degree	17	5.2
Bachelor's degree/ITS	40	12.2
Master's degree	3	0.9
Total	328	100.0

Table 5 - Professional status of beneficiaries at the start of the program

Gender	No. of beneficiaries	%
Female	60	18.3
Male	268	81.7
Total	328	100.0

Table 6 - Gender breakdown of beneficiaries

1.3 Results achieved

The project offered four advanced digital training courses, for a total of 13 editions.

Course	Basic digital hours	Advanced digital hours	Soft skills hours	No. of editions	No. of beneficiaries
Junior Java Developer	72	356	64	8	204
Junior System and Cybersecurity Analyst	56	248	44	3	78
Junior Data Engineer	84	392	64	1	23
Junior Salesforce Developer	88	344	60	1	23

Table 7 – Details of training courses, breakdown of hours and beneficiaries trained. 'Trained' means a participant who has attended at least 75% (65% if a new entrant) of the hours of the course for which they were enrolled.

Considering all editions of the training courses provided, the project involved a total of 364 participants, of whom **328** completed the training (**98.5% of the target set**, i.e., 333), with a drop-out rate of 9.9% (36 participants). The *drop-out* rate for the project is significantly lower than the average for projects under the Onlife call for proposals (see Figure 3).

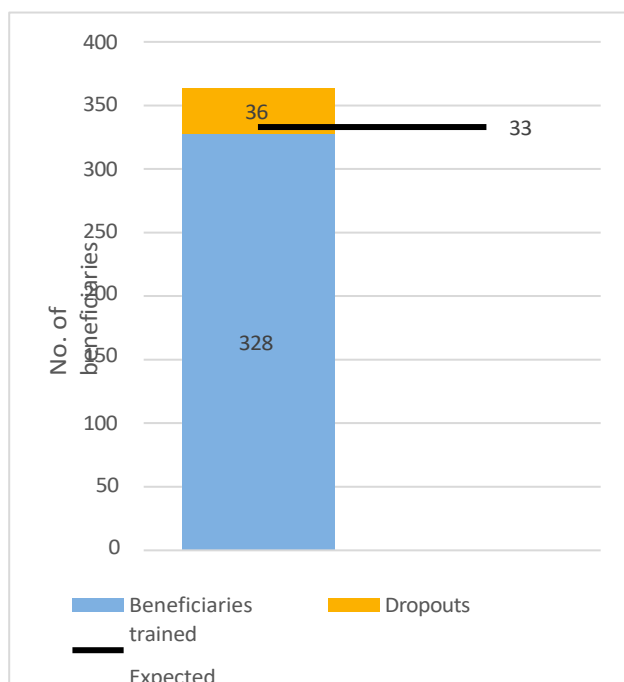


Figure 2 – Project beneficiaries involved and expected beneficiaries

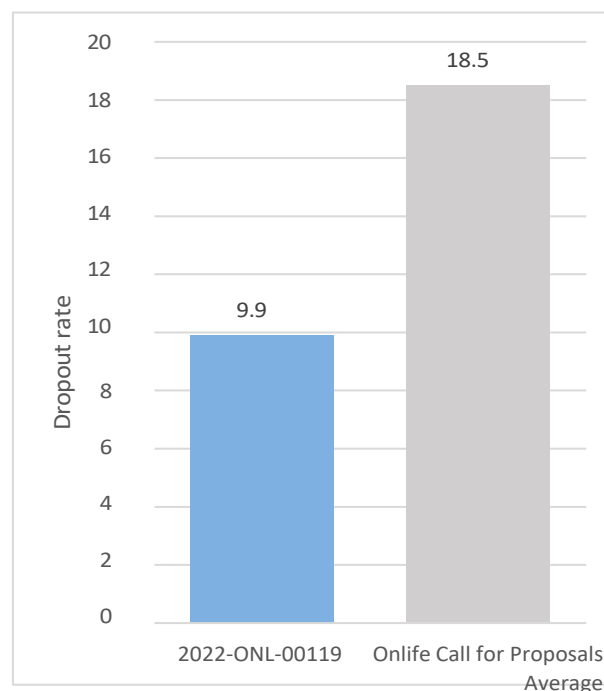


Figure 3 – Dropout rate for the project and average dropout rate for projects in the Onlife call for proposals

With regard to employment outcomes, of the 328 participants who completed the training program, 199 (60.7%) found some form of (re)employment. Details of the types of jobs found by beneficiaries are shown in Table 8.

Type of contract	No. of beneficiaries	%
Employee	99	49.8
Quasi-subordinate	8	4
Internship	86	43.2
Self-employed	1	0.5
Civil service	2	1
Not available	3	1.5
Total	199	100.0

Table 8 – Employment results, broken down by type of job obtained by beneficiaries

¹ The certification of beneficiaries' job placements and/or improvements was based on documents such as: a copy of the employment contract, a copy of the last pay slip, the Unilav form, the C2 historical form, a self-declaration by the beneficiary or employer, as well as the analysis of *follow-up* questionnaires administered directly by the Evaluation Lab.

2. IMPACT ASSESSMENT

In order to obtain an overall assessment of the improvements and changes produced, each project supported is subject to a structured and comprehensive impact assessment carried out by *the Evaluation Lab*, the research and analysis unit used by the [independent Scientific Committee](#) of the Digital Republic Fund. As required by the Fund's guidelines, the impact assessment is carried out systematically on all projects supported within the call for proposals. The objective of the assessment is twofold: on the one hand, to provide each project with evidence of its effectiveness and, on the other, to evaluate the interventions from a comparative perspective in order to identify the most promising projects for large-scale implementation. This dual purpose is part of the Fund's medium-term objective of providing public decision-makers with evidence on *best practices and models* to be used as a reference for future public policies. To ensure the comparability of the outcomes of the various initiatives supported, it is therefore essential that the metrics of success and methods of analysis are common to all projects. In pursuing this, the impact assessment is geared towards the final objectives set out in the call for proposals and the Fund's guidelines and therefore to the dimensions covered by the DESI indicator, described below.

The result of this comprehensive and comparative assessment is ultimately expressed as a **bonus coefficient**, assigned to projects in proportion to their measured impact, which can be used in the second edition of the same call for proposals.²

2.1 Data and questionnaires

2.1.1 Data collection

As part of the Onlife call for proposals, data collection on participants, which is essential for impact assessment, was carried out through a survey.³ The questionnaires were administered directly by *the Evaluation Lab*, which contacted the people involved through a centralized procedure across all the initiatives supported. Data collection involved four 'moments' of contact with participants: before the start of training (*Baseline*), at the end of training (*Endline*), three months after the end (*Follow Up 1*) and six months after (*Follow Up 2*).



²This report presents the results of the analysis of the questionnaire data currently available, collected on the beneficiaries and the control group (the external panel, described below) during the project, in accordance with the impact assessment plan. Further analyses, carried out subsequently on administrative data, may provide additional evidence with reference to employment outcomes only, due to the different nature and scope of the sources used. This additional evidence may be included in future scientific studies or summaries of the results of the Call for Proposals, but does not in any way replace what is presented in this report.

³ The questionnaires were mainly administered using CAWI (*Computer Assisted Web Interview*) methods, with telephone and SMS (or similar) contacts in cases of non-response.

In accordance with the Grant Award Regulations, *baseline* and *endline* surveys were considered mandatory.

endline surveys were considered mandatory, in as they immediately preceded and followed the training activities. For post-training surveys (*Follow-up*), however, the partnership's collaboration was requested in re-contacting participants to obtain good response rates. To this end, alternative tools to CAWI interviews were also used for *Follow-ups*, such as shorter telephone interviews and monetary incentives for responding, following a structured procedure common to all projects.

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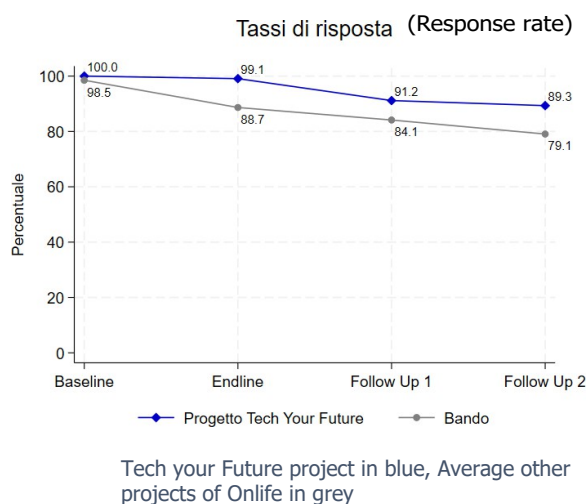


Figure 4 - The graph shows the response rates to the four surveys administered by the Evaluation Lab. The response rate for the project is shown in blue, while the average for all projects in the Onlife call for proposals is shown in gray.

The TECH YOUR FUTURE project recorded excellent response rates to the questionnaires, which were overall higher than the average rates found within the Onlife call for proposals.

2.1.2 Outcomes of interest

The complexity of the evaluation exercise, which requires a comparative assessment of all interventions, made it necessary to clearly define the common *outcomes* on the basis of which the impact assessment would be carried out. In line with the guidelines of the Digital Republic Fund and the objectives set out in the Onlife call for proposals, particular importance was given to the dimensions captured by the European Commission's DESI index (see box below); the two main dimensions relating to impact assessment that were measured in the questionnaires are:

The DESI (*Digital Economy and Society Index*) is an index relating to the level of digitization of EU countries, and its *Human Capital* component measures, among other dimensions, the percentage of people with (at least) basic digital skills and the rate of employment in the ICT sector.

DESI digital skills are defined according to the *European Framework for Digital Competence for Citizens* (DigComp 2.1 model). To test these skills, a variant of the DigComp SAT is applied, a self-perception test designed specifically to measure these skills in five areas (Information and Data, Communication and Collaboration, Digital Content Creation, Security, Problem Solving).

➤ *DESI digital skills learning outcomes*: these concern the self-perception of digital skills, measured according to the European Commission's DigCompSAT model, which forms the basis of the *DESI Human Capital* index; these outcomes are measured using *Baseline* and *Endline* questionnaires, administered at the beginning and end of the training. In addition to *DESI* digital skills, these questionnaires also measure 'soft' or transversal skills.⁴

➤ *Employment outcomes*: these include employment (in general and in the digital field) and income from work, as well as the type of contract (employee, internship, other) and are recorded in *Baseline* and through the two *Follow-Up* questionnaires in the three and six months following the end of the training.

It is essential to emphasize that the *DESI* digital skills measured by DigCompSAT do not include specialist skills (e.g., specific software) or professional skills required by many Onlife projects. For this reason, the results on DESI digital skills provide an indication of the impact of training on "generic" digital skills and digital *self-efficacy*. The impact of training on professional and job-specific digital skills is assessed through its impact on job outcomes. As detailed below, the impact index weights the outcomes differently between projects with a greater focus on general skills training and projects more oriented towards professional training.

⁴ 'Soft' skills refer to skills (openness, collaboration, leadership, empathy, empowerment) that correlate with employability, measured using tools based on **psychometric scales** validated in scientific literature.

2.1.3 Participant satisfaction levels

In addition to the outcomes relevant to impact assessment, the questionnaires collect information such as the degree of satisfaction of beneficiaries at the end of training. This information is measured in *the Endline* survey, at the end of training for each individual, and focuses on the overall satisfaction and usefulness of the training.

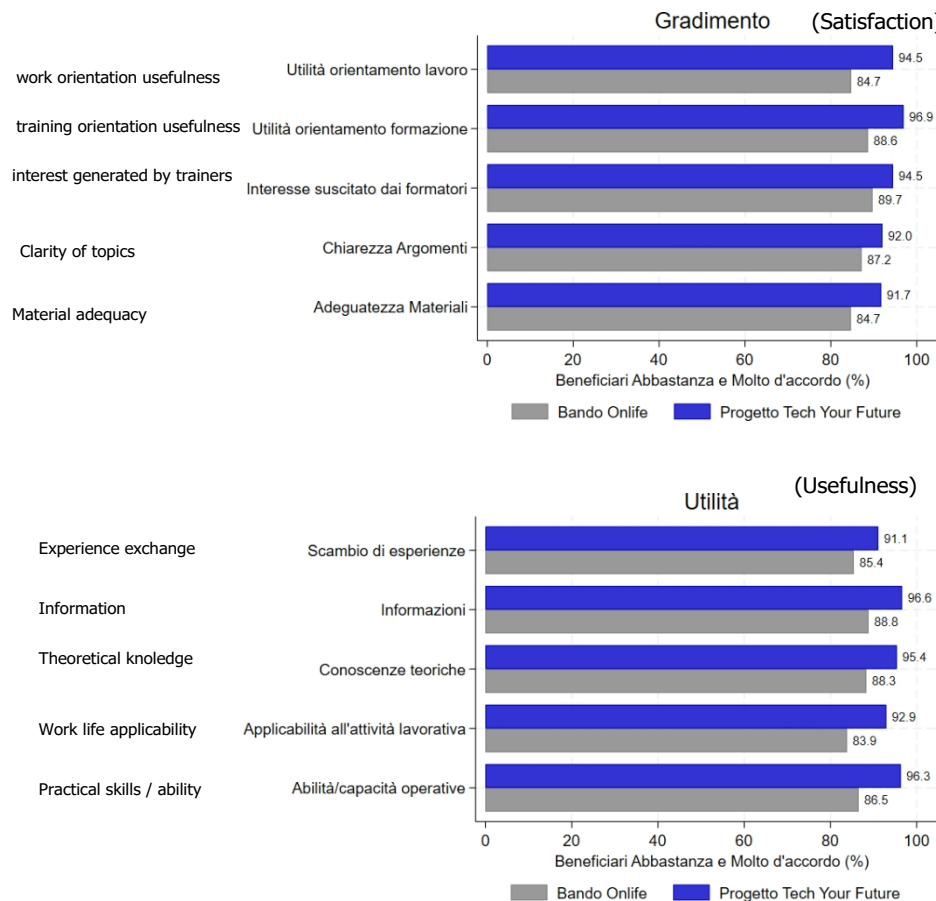


Figure 5 – The graphs show the percentage of beneficiaries who say they 'somewhat' or 'completely' agree with the items on satisfaction (top) and usefulness (bottom) of the training contained in the Endline questionnaire. The project is shown in blue, and the average of Onlife projects is shown in gray.

The TECH YOUR FUTURE project has an excellent satisfaction rating, with levels of satisfaction and perceived usefulness consistently above the call for proposals averages.

⁵There are five satisfaction items, with response options ranging from 1 (Strongly disagree) to 4 (Strongly agree), specifically: 1) The guidance and support activities for WORK were useful and effective; 2) The guidance and support activities for TRAINING were useful and effective; 3) The trainers were able to stimulate and motivate interest in the course content; 4) The topics covered during the training were clear and well presented; 5) The teaching materials provided were adequate and useful for learning the course content.

⁶There are five utility items, with response options ranging from 1 (Not at all useful) to 5 (Very useful), specifically: 1) The exchange of experiences; 2) The information provided; 3) The theoretical knowledge acquired; 4) The applicability of the content to work activities; 5) The operational skills/abilities developed.

2.2 Counterfactual analysis

2.2.1 The control group and matching

Project impact evaluation focuses on measuring the added value generated by each project on the aspects indicated.

as the main objectives of the Onlife call for proposals. This involves answering the question of *what would have happened* in the absence of the intervention (*"What would have happened (to the digital skills and employment outcomes of the beneficiaries) if the project had not been implemented?"*). It is therefore necessary to follow a 'counterfactual' logic, which involves estimating the evolution of the beneficiaries' outcomes if the training had not taken place. For this exercise, a group of people (called a 'control group') is needed who do not take part in the project but allow us to observe how skills and employment would have evolved without the training.

The creation of a control group requires potentially identifying a 'surplus' of eligible people who do not take part in training activities. In the case of the TECH YOUR FUTURE project, unique among the projects in the Onlife call for proposals, additional people were effectively identified who could serve as a control group;

however, this was only possible for a very limited (and selected) number of people and only for some of the training courses offered, as detailed below. In addition to this, the Evaluation Lab recruited an external control group common to the Onlife projects and composed of individuals with characteristics similar to the beneficiaries of the call for proposals. Specifically, throughout the implementation period of the Onlife projects, 1,025 unemployed/unemployed people under the age of 35 with socio-demographic and motivational characteristics similar to those of the project beneficiaries were interviewed. These panelists were contacted at regular intervals to administer questionnaires identical to those given to the beneficiaries of the call for proposals.

The "external" statistical panel

The Evaluation Lab recruited a panel of 1,025 unemployed/unemployed people under the age of 35, with similar characteristics to the beneficiaries involved in the projects. Respondents to the external statistical panel were selected based on their interest in digital training. This initial selection, together with cell sampling, allows for greater comparability with the beneficiaries of the projects financed by the Fund.

The panel sampling cells were defined on the basis of the following strata: geographical area of residence (Northwest, Northeast, Center, South, Islands); age group (15-35, 36-50); educational qualification (up to middle school, high school diploma, university degree or higher); employment status (employed, unemployed/never employed).

The external statistical panel is consulted approximately **every three months** over a period of several weeks so that it can also cover projects that end at different times.

An *ad hoc* control group is then extracted from the external panel of respondents for each project, calibrated to the specific socio-demographic and motivational characteristics of the selected beneficiaries. In practice, a statistical matching procedure is applied to obtain a group that is as similar as possible in terms of socio-demographics, observation period, and motivation.⁷ In this way, a "balanced" control group is obtained.

'Common support' in statistical matching procedures

In order to obtain control observations for each of the beneficiaries involved, the control group must include a panelist with identical characteristics in all the dimensions used for matching (age group, area, observation period, motivation, etc.). Beneficiaries without an adequate counterpart (known as "off support") cannot be compared to the control group. The "support" rates for the TECH YOUR FUTURE project, i.e., the percentages of beneficiaries for whom there is at least one corresponding panelist, are:

- 69% for the outcomes on digital skills measured at baseline;
- 68% for employment outcomes measured at 6 months.

statistical *matching* procedure is applied to obtain a group that is as similar as possible in terms of socio-demographics, observation period, and motivation.⁷ In this way, a control group is obtained that is 'balanced' and therefore comparable to the beneficiaries in terms of these characteristics.

The following paragraphs present both the analyses carried out with the control group obtained from the external panel, following the common approach to the evaluation of all projects in the Onlife call for proposals, and the additional analysis resulting from the comparison with the control group recruited directly by the project.

2.2.2 TECH YOUR FUTURE beneficiaries compared to the control group

In order to interpret the results produced by the project, it is essential to consider the initial skills of the beneficiaries compared to similar profiles (the control group). The figure below compares the initial digital and transversal skills with those of the matched control group. The *TECH YOUR FUTURE* project ranks

in the upper right-hand box, indicating that its beneficiaries have higher average initial skills than the matched control group. In this sense, the project is in line with other initiatives in the call for proposals (points in gray) which, similarly, involved beneficiaries with higher average levels than their matched control group.

Similarly, it is important to consider the activities carried out by

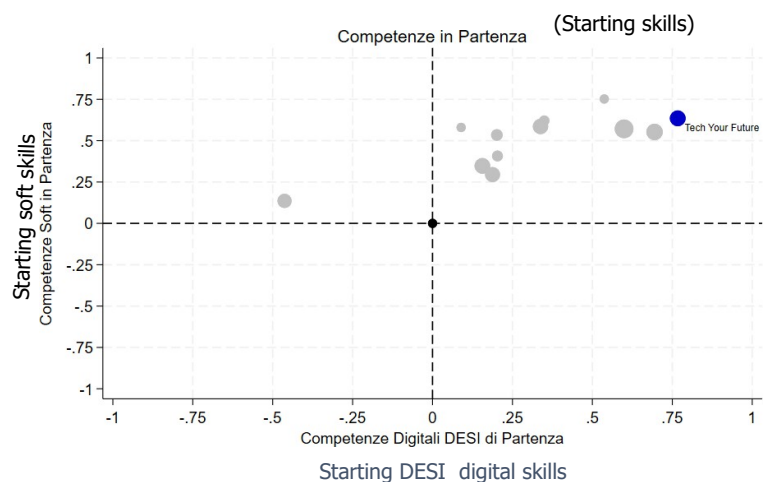


Figure 6 - The graph shows the DESI digital and transversal skills of the beneficiaries participating in the project (blue dots) compared to the control group (black dots). The gray dots indicate the other projects supported within the Onlife call for proposals. The distances are expressed in terms of standard deviations from the control group.

⁷ Specifically, the variables used are: 1) *socio-demographic*: gender, age, area of residence, highest level of education, employment status, observation period; 2) *work attitudes*: being active in looking for a job, preference for full-time work over part-time work, willingness to relocate for work.

Control group during the training period for beneficiaries: in line with counterfactual evaluation, the control group is also "free to train" because it must provide a snapshot of what would have happened if the training offered by the project had not been available. In the specific case of the TECH YOUR FUTURE project, approximately 14% of the control group matched to the beneficiaries attended some type of training course during the period in which the latter participated in the project. The measured impacts should therefore be interpreted in this light and the value measured 'in addition' to other programs freely accessible to *the target group* of interested persons.

2.2.3 The effect estimation model

Once the control group has been obtained and matched, the impact analysis consists of comparing the evolution of the beneficiaries before and after the training with the control group in terms of the outcomes of interest.

The key assumption behind this estimate is that (even in the presence of initial differences) the evolution of outcomes in the two groups would have been the same in the absence of training, and therefore that the change over time in digital skills or employment would have been the same for beneficiaries and the control group. Under this assumption, the model allows us to eliminate the initial differences and those in the evolution of *outcomes* due to confounding factors common to both groups, such as the physiological increase in skills and/or employment over time, thus isolating the part of the change due exclusively to the project intervention (estimated effect).

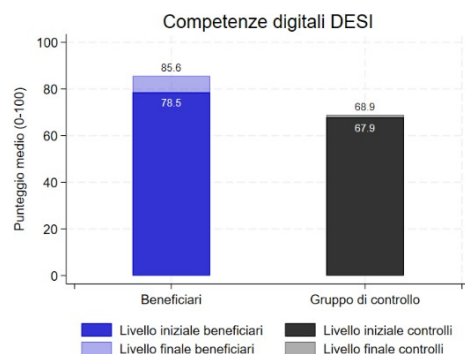
The exact same logic is followed in the analysis with respect to the internal control group recruited by the project: the outcomes of the beneficiaries over time are compared with those of the control group, whose outcomes are measured at the same time. The difference in these outcomes between the two groups over time results in the impact estimate.

2.3 The impacts measured

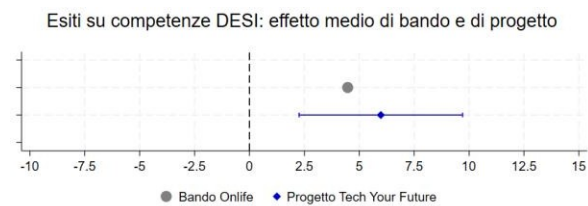
2.3.1 Impact on DESI digital skills

For the estimates, the DESI digital skills measured in the questionnaires (*Likert* questions 1 to 4) are added up and rescaled on a scale from 0 to 100, which can be easily interpreted as a **percentage index of digital skills**, where 100 indicates that a beneficiary has mastered all DESI skills and 0 indicates the opposite. The graphs below show the starting and ending levels for both the beneficiaries and the matched control group, and therefore present the estimated effect, in absolute terms and relative to the average effect of the projects supported within the Onlife call for proposals.

⁸ In technical terms, the methodology is known as *difference-in-differences* to indicate the double comparison between the treatment and control groups before training, and the treatment and control groups after training.



Starting (dark) and final (light) level = Blue for beneficiaries, grey for control group



Outcome on DESI competences: Average project effect (blue) vs avg all other project of Bando Onlife (grey)

Figure 7 - On the left, the graph shows the initial and final DESI digital skills levels of the project beneficiaries (blue bars) and the matched control group (black bars). On the right, the graph compares the estimated effect on DESI digital skills for the project (blue dot) with the average effect measured in the Onlife call for proposals (grey dot); the horizontal lines around the effect represent the confidence intervals, i.e., the margins of uncertainty of the estimates (the narrower the interval, the more accurate the estimate).

The project had a positive impact on DESI digital skills: beneficiaries increased their skills by around 7 points (out of 100), rising from 78.5 to 85.6 between before and after the training. During the same period, people in the matched control group improved their skills by 1 point, from 67.9 to 68.9. This results in an estimated project effect of 6 (7-1), which is slightly higher than the average found in the Onlife call for proposals.

2.3.2 Impact on employment outcomes

With regard to employment outcomes, the impact assessment focuses on the effects on the rate (and type) of employment and on income from work. Employment and income, measured before training and three and six months after, are shown in the graphs below on the left, both for beneficiaries and for the matched control group, while the graphs on the right compare the estimated six-month effects for the project with the average impact measured for the Onlife call.

Six months after training, in terms of employment rates and income from work, the beneficiaries of the project had more positive *outcomes* than their counterparts in the control group who did not benefit from the project training. Compared to a 26.8 percentage point increase in the employment rate of the control group, employment for beneficiaries increased by approximately 42.4 percentage points, resulting in an estimated effect on employment of 15.7 percentage points. Average income from work increased by €516 for beneficiaries compared to an increase of €280 for the control group, resulting in an estimated effect on income of approximately €236 per month.

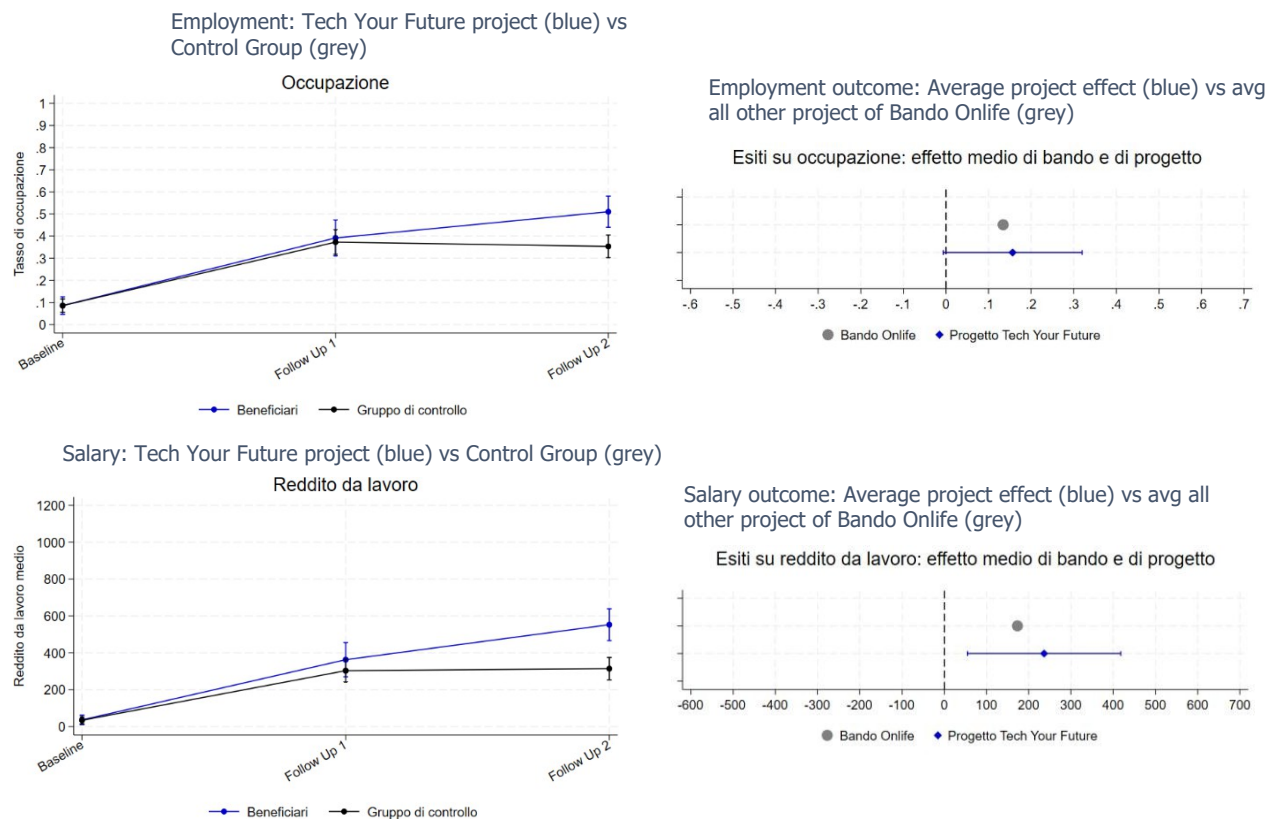


Figure 8 - The graphs at the top show the results on the employment rate: on the left, the graph shows the evolution of the employment rate from before the training to three and six months after, comparing the project beneficiaries (in blue) with the matched control group (in black); on the right, the graph compares the six-month effect on employment estimated for the project (blue dot) with the average effect measured for the Onlife call for proposals (gray dot); the horizontal lines around the dots represent confidence intervals, i.e., the margins of uncertainty of the estimates (the narrower the interval, the more accurate the estimate). The graphs below show the same comparisons for income from work; income from work is zero for those who are unemployed.

Overall, the TECH YOUR FUTURE project had a positive impact on employment outcomes, slightly above the average values recorded in the Onlife call for proposals.

In terms of contract type, the graph on the right breaks down the change in the employment rate, again compared to the evolution observed in the matched control group, into different types of work: employee, internship, or other forms (collaboration, self-employment, other).

Breaking down the effect by type of job helps to better understand where the positive effect on overall employment comes from. on overall employment. Although the increase observed for beneficiaries is broadly in line with the

control group in terms of employment and other types of contracts, the increase

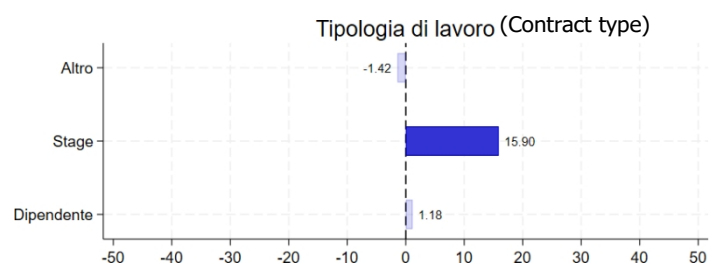


Figure 9 - The graph shows the estimated effects for the project in the analysis by type of contract. The estimates should be interpreted as the relative change for beneficiaries compared to controls in the probability of having a job, an internship, or another type of contract (collaboration, self-employment, other) six months after training: a positive estimate means that the change in probability for beneficiaries is greater than that of controls, while a negative estimate means that the change was smaller. The color intensity of the bars represents the significance of the estimated effects: the more intense the color, the more statistically significant the estimate.

in internship positions is significantly higher (by about 15.9) than in the control group, resulting in an overall positive effect on employment. The increase in employment and income compared to the control group is therefore mainly driven by the increase in paid internship positions.

The objectives of the Onlife call for proposals included the development of digital skills useful mainly for the employment of young NEETs. At the same time, the DESI index measures, among its various dimensions, the percentage of people employed in the ICT sector⁹ (see box above on the DESI index).

For this reason, as the main indicator summarizing the employment impacts of each project, a measure of 'digital employment'¹⁰ is calculated, which can summarize the increase in employment linked to the

digital skills compared to the control group generated by each project.

The graph on the right shows the six-month effect of the project on the digital employment rate. For the TECH YOUR FUTURE project, there was an increase in the digital employment rate of around 16 percentage points for beneficiaries compared to the matched control group, which is significantly higher than the average effect measured for other projects in the Onlife call for proposals.

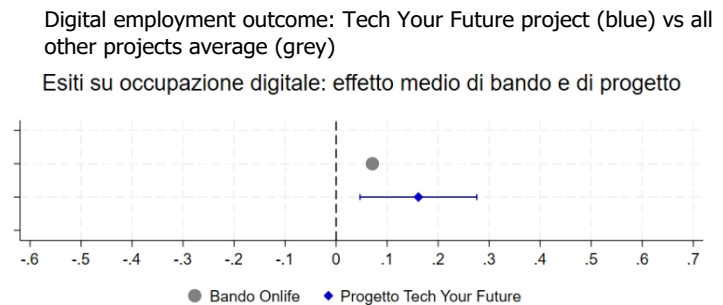


Figure 10 - The graph compares the estimated effect on the probability of digital employment for the project (blue dot) with the average effect measured in the Onlife call for proposals (gray dot); the horizontal lines around the effect represent the confidence intervals, i.e., the margins of uncertainty of the estimates (the narrower the interval, the more accurate the estimate).

⁹ The ICT sector, which stands for Information and Communication Technology, refers to all technologies used to manage, process, and transmit information in digital format.

¹⁰ Digital employment is defined as employment in a digital profession among those covered by the call for proposals, or more generally, employment that requires the use of IT skills and digital devices.

The following table summarizes the estimated effects with the control group matched by an external panel for the TECH YOUR FUTURE project.

Summary of estimated impacts		
	Estimated effect	t-statistic*
DESI digital skills	5.98	3.16
Employment rate		
At 3 months	1.90	0.23
6 months	15.66	1.89
Income from employment (euros/month)		
At 3 months	64.28	0.86
At 6 months	236.41	2.56
Digital employment rate		
At 3 months	5.24	0.76
At 6 months	16.12	2.77

Table 9 - The table summarizes the estimated main impacts of the project on: DESI digital skills, employment rate, income from work, and digital employment rate. The "Estimated effect" column indicates the effect in percentage points from 0 to 100 for digital skills, employment, and digital employment, and in euros per month for income from work.

* The "t-statistic" is a number that helps to understand how large an effect is relative to the uncertainty with which it is measured. In simple terms, it tells us whether an observed result is large enough relative to the "noise" or variability in the data to suggest that it is not just a fluke. The higher the t-statistic (in absolute value), the greater and better measured the effect. If it is low, it means that either the effect is small or it is difficult to measure accurately—or both. The convention defines an effect with a t-statistic greater than 1.65 as "statistically significant."

2.3.3 In-depth analysis with the internal control group

As part of the TECH YOUR FUTURE project, it was possible to set up and maintain an internal control group composed of people who were identified by the project but not selected to participate in the training. The control group was constructed *ex-post* from the *shortlists* of candidates who had passed the second selection phase (skills assessment) but did not enter the courses due to unavailability or *no-shows*. Since each list had only a few exclusions (5–6 people), the remaining individuals from all courses were combined to form a single cross-sectional control group. This is therefore a highly selected group, whose comparability to the project beneficiaries is *a priori* doubtful; in particular, selection on dimensions such as motivation or availability does not guarantee validity as a control group (where the main assumption for evaluation purposes is that it would follow the same evolution as the beneficiaries over time).

Furthermore, the internal control group is small in terms of numbers: 39 individuals (compared to 328 trainees) who completed questionnaires similar to those of the beneficiaries; in

¹¹ A preliminary comparison between the internal controls and the trainees in the courses covered shows, however, a good balance between the two groups along several dimensions at entry, with the exception of gender, employment status, and work motivation (being actively seeking work), which are therefore used as matching variables in order to increase the validity of the estimates.

Specifically, all internal controls responded to the Baseline questionnaire, 19 completed the Endline questionnaire, 26 completed the first follow-up questionnaire, and 27 completed the second follow-up questionnaire. Although this is a small sample size, the internal controls cover 9 out of 13 training courses (i.e., 69% of those trained).

Despite the obvious limitations of this analysis due to both the small number and the selection, a comparative analysis of the outcomes of the beneficiaries with respect to the internal control group is presented here. For further analysis and to verify the robustness of the main results, impact analyses limited to the courses covered by the internal controls are presented, comparing the *outcomes* of interest between the beneficiaries and the matched internal control group.

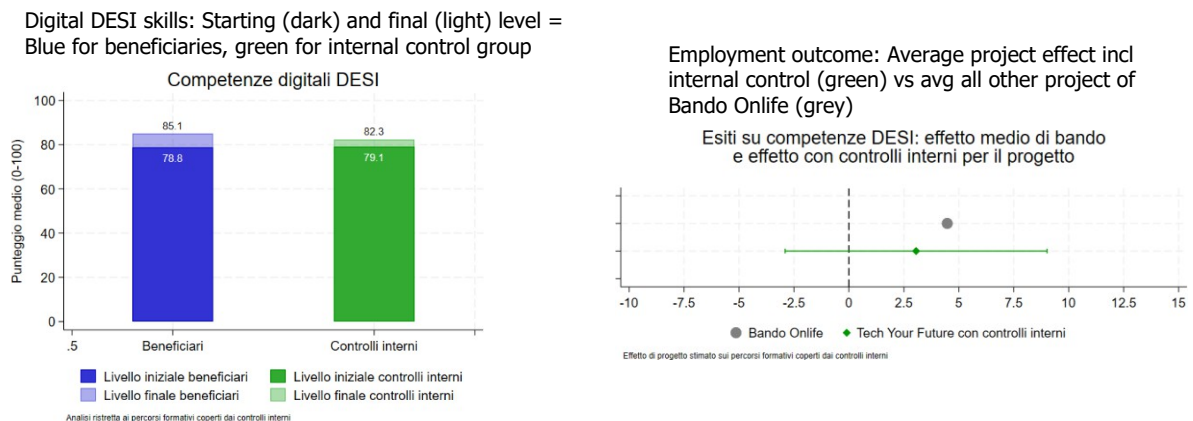


Figure 11 - On the left, the graph shows the initial and final DESI digital skills levels of the beneficiaries of the courses covered (blue bars) and the matched internal control group (green bars). On the right, the graph compares the estimated effect on DESI digital skills relative to the internal control group (green dot) with the average effect measured in the Onlife call for proposals (gray dot); the horizontal lines around the effect represent the confidence intervals, i.e., the margins of uncertainty of the estimates (the narrower the interval, the more accurate the estimate).

In comparison with the internal control group, the impact on DESI digital skills indicates that beneficiaries of the courses covered by internal controls increase their skills by 3.1 percentage points more than those who did not participate in the training; nominally, this value is approximately half the effect on skills measured in relation to the evolution of the matched external control group, but it is measured with considerable inaccuracy given the small size of the control group. In general, this additional analysis confirms an overall effect on DESI digital skills that is broadly in line with the Onlife call for proposals average.

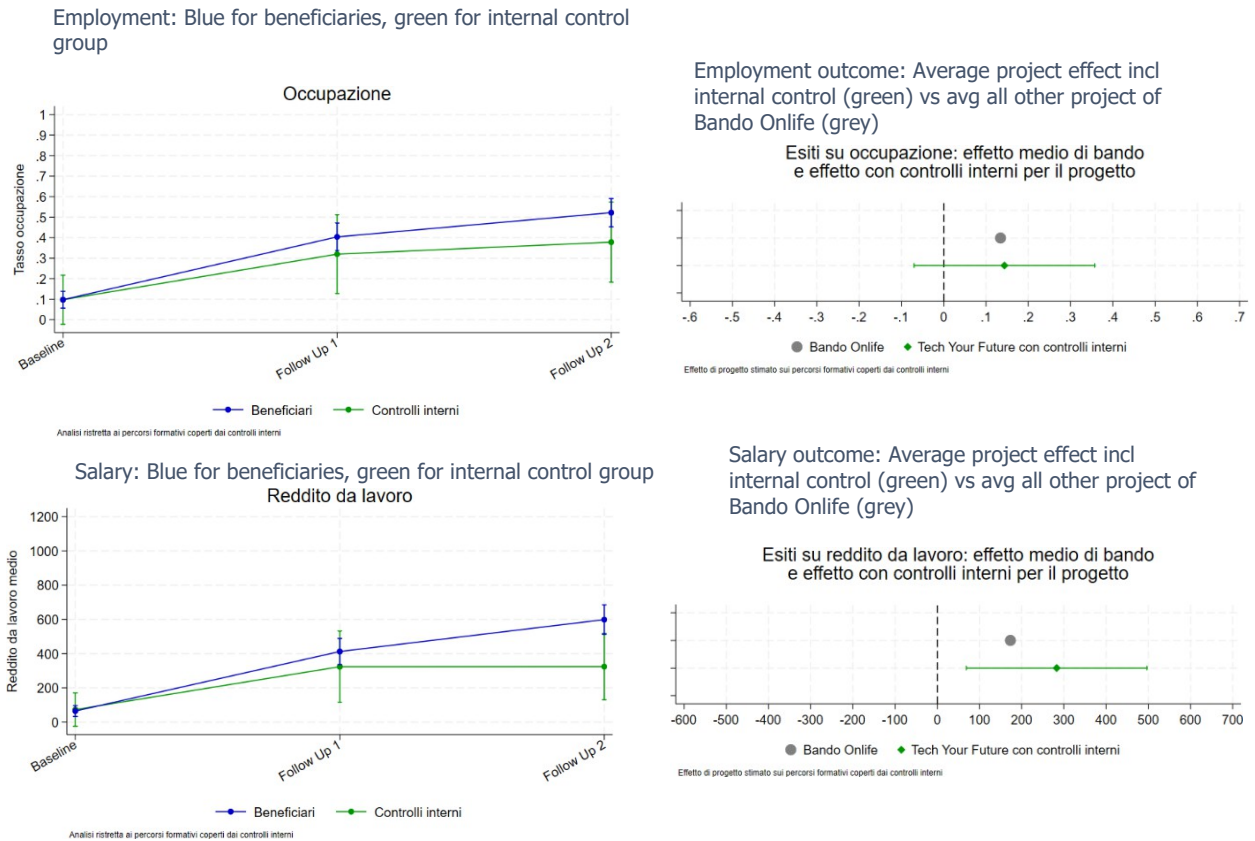


Figure 12 - The graphs above show the results on the employment rate: on the left, the graph shows the evolution of the employment rate from before training to three and six months after, comparing the beneficiaries of the covered courses (in blue) with the matched internal control group (in green); on the right, the graph compares the estimated six-month effect on employment relative to the internal control group (green dot) with the average measured for the Onlife call (gray dot); the horizontal lines around the dots represent confidence intervals, i.e., the margins of uncertainty of the estimates (the narrower the interval, the more accurate the estimate). The graphs below repeat the same comparisons for income from work; income from work is zero for those who are unemployed.

In terms of employment outcomes six months after training, the picture that emerges from the comparison with internal controls tends to confirm the main results obtained with the external control group: beneficiaries of the courses covered increased their employment rate by 14.4 percentage points and increased their income from work by approximately €283 per month more than those in the internal control group. These effects, although very imprecise given the small size of the internal control group, confirm the positive results of the project in terms of employment outcomes, with values above the Onlife call for proposals average, especially in terms of income from work six months after training.

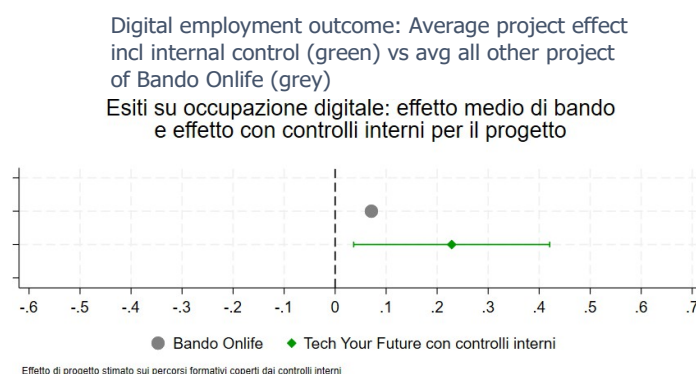


Figure 13 - The graph compares the estimated effect on the digital employment rate compared to internal controls for beneficiaries of the courses covered (green dot) with the average effect of the call for proposals (gray dot); the horizontal lines around the effects represent the confidence intervals, i.e., the margins of uncertainty of the estimates (the narrower the interval, the more accurate the estimate).

Consistently, also with regard to the outcomes on the digital employment rate, the comparison with the internal control group confirms positive results for the TECH YOUR FUTURE project: beneficiaries of the covered pathways increase the probability of digital employment six months after training by about 23 percentage points compared to the evolution observed for the internal control group.

The following table summarizes the estimated effects with the internal control group for the TECH YOUR FUTURE project.

Summary of estimated impacts		
	Estimated effect	t-statistic*
DESI digital skills	3.06	1.01
Employment rate		
At 3 months	8.41	0.82
6 months	14.4	1.32
Income from employment (euros/month)		
At 3 months	105.9	0.91
At 6 months	283.0	2.60
Digital employment rate		
At 3 months	20.6	2.77
At 6 months	22.9	2.34

Table 10 - The table summarizes the estimated impacts of the project with internal control on: DESI digital skills, employment rate, income from work, and digital employment rate. The "Estimated effect" column indicates the effect in percentage points from 0 to 100 for digital skills, employment, and digital employment, and in euros per month for income from work.

* The 't-statistic' is a number that helps to understand how large an effect is relative to the uncertainty with which it is measured. In simple terms, it tells us whether an observed result is large enough relative to the 'noise' or variability in the data to suggest that it is not just a fluke. The higher the t-statistic (in absolute value), the greater and better measured the effect. If it is low, it means that either the effect is small or it is difficult to measure accurately—or both. The convention defines an effect with a t-statistic greater than 1.65 as "statistically significant."

2.4 THE PREMIUM COEFFICIENT

The impact assessment of the Onlife call for proposals aims to identify scalable solutions that can inform future public policies in the field of digital training. For this reason, as indicated in the Fund's guidelines, projects that receive a positive evaluation from the independent Scientific Committee are awarded a bonus coefficient to be used in subsequent calls for proposals from the Fund that involve larger-scale implementations in the same field.

To achieve this, an **impact index** was calculated for each project, based on the estimated results presented in the previous sections. **The impact index focuses on the main outcomes of interest: DESI digital skills and digital employment outcomes.** To take into account

Of the various training models and focuses present in the projects, the two main outcomes are weighted in a single **aggregate impact** based on the type of skills trained: for projects that train generic skills captured by the DigComp framework and *DESI*, greater weight is given to *DESI* digital skills outcomes; for projects with more specific and professional skills training, employment outcomes are weighted proportionally.¹² The categorization of training is shown in Table 7 in Section 1: for the TECH YOUR FUTURE project, 17% of training is generic and the remaining 83% is specific or professional skills training.¹³ The aggregate impact is then multiplied by the rate of achievement of the expected target and finally rescaled on a scale from 0 to 100 in proportion to the observed distance between the minimum and maximum impact of the projects in the call for proposals; the resulting value can then be read as **a percentage of the distance between the minimum and maximum impact observed** (e.g., 60% of the distance between the minimum and maximum).

The **bonus coefficient** is then assigned by multiplying the percentage impact index by the maximum number of points obtainable (3 points).

In the specific case of the TECH YOUR FUTURE project, while recognizing the limitations of the analysis with internal controls (given the low number and selection in terms of motivation and availability of controls), it was decided to take into account the award coefficient

Calculation of the impact index

The impact index is calculated as follows:

1. Calculation of *the t-statistic* for the dimensions of interest (DESI digital skills, digital employment at six months);
2. Aggregation of t-statistics in proportion to the content of the training;

$$\text{Aggregate impact} = \% \text{ generic training} \times \text{DESI } t\text{-stat} + \% \text{ professional training} \times t\text{-stat digital employment}$$
3. Multiplication by the target achievement rate & conversion into % relative to the maximum value observed in the call for proposals

$$\text{Impact index \%} = [1 + ((\text{Aggregate impact} \times \% \text{ target} - \text{Max}) / (\text{Range between Max and Min}))] \times 100$$

¹² In the case of projects with a strong or exclusive focus on professional training, the index therefore weighs exclusively (or almost exclusively) on employment outcomes.

¹³ The percentages are obtained from Table 7. The percentage of basic/generic (or advanced/professional) training is given by the ratio between the number of basic/generic digital hours, multiplied by the number of beneficiaries who participated in basic/generic training, and the total number of training hours (basic/generic and advanced/professional digital, excluding internships and soft skills), again multiplied by the respective number of beneficiaries trained.

the greater accuracy in estimates that the project obtains from the double comparison with the external and internal control groups. In practice, this means adding to the main impacts obtained from the comparison with the external control group—measured using t-stat—those obtained from the analysis with internal controls, the latter weighted by the number of internal controls available (39) out of the total number of formats (328).¹⁴

	Comparison with external controls	Comparison with internal controls	Combination of evaluation approaches 39 $tstat_{ext} + (\frac{39}{328}) * tstat_{int}$
t-stat DESI	3.16	1.01	3.3
t-stat Digital employment	2.77	2.34	3.0

The following table summarizes the information needed to calculate the bonus coefficient:

Calculation of the bonus coefficient	
Impact of DESI digital skills (t-statistic)	3.3
Impact of digital employment at 6 months (t-statistic)	3.0
% of generic training	17
% of professional training	8
Aggregate impact $tstat_{DESI} * \%generic + tstat_{occupazione digitale} * \% professionalizzante$	3.1
% of target achieved*	98.5
Maximum aggregate impact of the call for proposals**	3.0
Range between maximum and minimum of Call for Proposals	3.9
Impact index (%) $(1 + \frac{Impatto_{aggregato} * \%target - Max}{Intervallo}) * 100$	100.0
Bonus coefficient (up to 3 points) $IndiceImpatto \% * 3 punti$	3.0

* If the target is exceeded, the % of target achievement is indicated as 100.

** The maximum aggregate impact of the Call for Proposals is the aggregate impact of the project with the maximum value, after multiplying it by its target achievement percentage.

Table 11 - The table summarizes the information needed to calculate the bonus coefficient for the project; the results calculated from the information in the table may differ from those presented for rounding reasons. The impacts on the dimensions of interest (DESI skills and digital employment at six months) are presented in terms of t-statistics; the % of generic (or specific/professional) training is given by the ratio

¹⁴This calculation aims to recognize the greater accuracy obtained by the estimated results through the matched control group from the external panel, having guaranteed internal control; as explained in the report, the t-stat already contains the accuracy of the estimate in comparison with the external or internal control. To take into account the double estimate available for the project, the t-stat calculated with matched control by external panel is added to the t-stat calculated with internal control in proportion to the number of internal controls on the total number of beneficiaries trained. In assigning the bonus coefficient, this allows the t-stat obtained from the comparison with the external panel to be 'increased' due to the greater precision of the additional estimate (in proportion to the size of the internal control).

of basic/generic (or advanced/professional) digital training hours out of the total number of digital training hours weighted by the number of trainees who participated in basic/generic (or advanced/professional) digital training; the target achievement percentage indicates the number of beneficiaries actually trained compared to the number envisaged in the project proposal. The percentage impact index is calculated according to the procedure illustrated in the respective box; the bonus coefficient is the result of the product between the percentage impact index and the maximum number of points obtainable (3 points).

In light of the results of the impact assessment, the **TECH YOUR FUTURE** project is awarded a **bonus coefficient of 3 points** to be applied to any **new project proposal in the Onlife+ call for proposals**.