



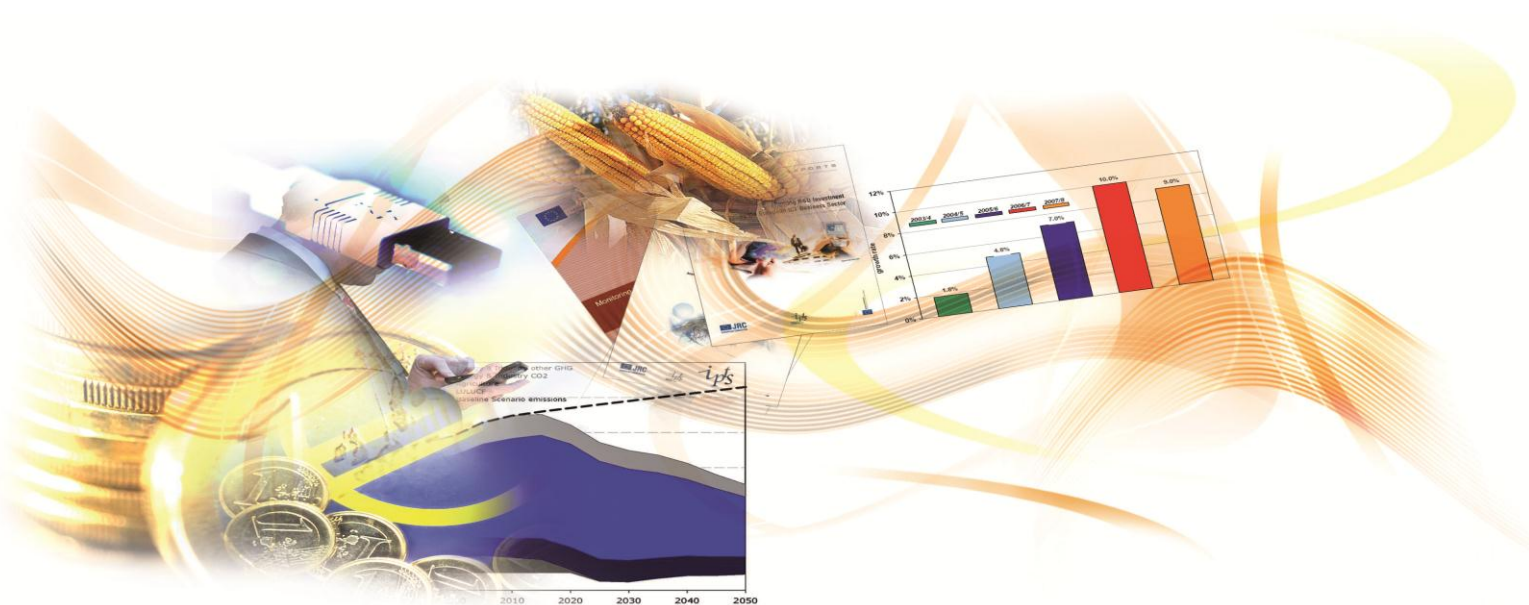
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Measuring the Impact of eInclusion Actors: Impact Assessment Framework Annex – the MIREIA eI2-IAF Toolkit

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A1 Introduction

A1.1. Overview of the MIREIA eI2-IAF - Toolkit

This Annex accompanies the report – Measuring the Impact of eInclusion Actors: Impact Assessment Framework: Main Report¹ of the research project ‘*Measuring the Impact of eInclusion Actors on Digital Literacy, Skills and Inclusion Goals of the Digital Agenda for Europe*’ conducted by JRC-IPTS and DG CONNECT. This policy-oriented research project aimed to map and characterise the diverse set of actors involved in implementing eInclusion policies and create adequate measurement instruments to provide evidence on how they contribute to the achievement of the Europe 2020 goals. The Main Report together with this Annex presents the research results of the second component of the project, which provides a comprehensive Impact Assessment Framework, MIREIA eI2-IAF. This can be used to measure the socio-economic outputs, outcomes and impacts of eInclusion intermediary actors in Europe. It includes both a conceptual model and an operational framework with practical guidelines.

This Annex provides a detailed description of the **MIREIA eI2-IAF** (eInclusion Intermediaries Impact Assessment Framework) **Toolkit** related to the operational framework of the MIREIA eI2-IAF as described in Figure A1. It was decided to publish them online as two separate reports for the convenience of those who only wish to use the Toolkit.

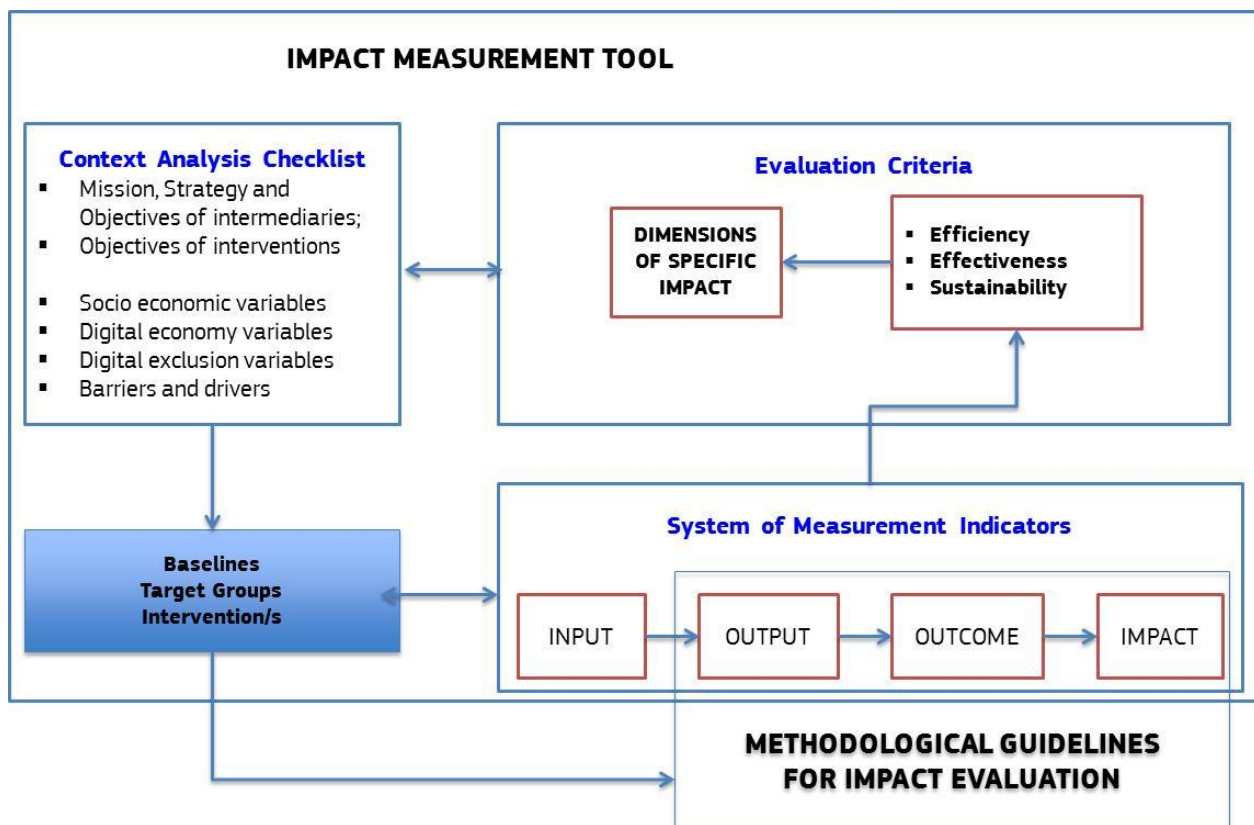


Figure A1 - MIREIA eI2 IAF: Operational Framework and related Toolkit

¹ The Final Report and related Annex constitute the Deliverable D2.3 of the research project - Measuring the Impact of eInclusion actors on Digital Literacy, Skills and Inclusion goals of the Digital Agenda for Europe, co-funded by the European Commission DG Communications Networks, Content and Technology (DG CONNECT, former DG INFSO) and the Joint Research Centre’s Institute for Prospective Technological Studies (JRC-IPTS) under the Administrative Arrangement with Reference INFSO/H3/2011/2 - SMART 2011/007 – Nr. JRC 32611-2011-12. Both documents should be referenced as Misuraca, G., Centeno, C., & Torrecillas, C., (2014). Impact Assessment Framework. European Commission, JRC Science and Policy Report Series. EUR 26602 EN. Luxembourg, Publications Office of the European Union, and are available at: <http://is.jrc.ec.europa.eu/pages/EAP/eInclusion/MIREIA.html>

The operational framework of the MIREIA eI2-IAF and related Toolkit consists of the following elements:

- **The Impact Measurement Tool**, which is constituted by the following sub-components:
 - **Context Analysis Checklist** helps eInclusion Intermediaries to better understand the context in which they are operating and to help them to define (*ex-ante*) *baselines*, *target groups characteristics and sizes* of the interventions to be implemented, and to update such information on a regular basis to support *in-itinere* and *ex-post* evaluations.
 - **System of measurement indicators** assists the intermediaries in monitoring and measuring their interventions (*in-itinere* and *ex-post*, but also in estimating *ex-ante* potential impacts) in relation to the resources allocated (inputs), the related services delivered to a target population (outputs), the direct and indirect outcomes generated and the estimated contribution to specific and global impacts.
 - **Evaluation criteria** help assess the outcomes and impacts generated by each intervention (i.e. micro level), and the aggregated specific impact of interventions carried out by an intermediary organisation (i.e. at meso level). They also help estimate the contribution of eInclusion intermediary interventions to achieving global impacts in their respective contexts (i.e. macro level) efficiently, effectively and sustainably.
- **Methodological guidelines for impact evaluation**, to provide intermediaries with a scientific approach, based on counterfactual techniques, for evaluating cause-effect relationships between their interventions and the impacts they have generated. Although based on a micro-level approach, these guidelines serve to justify intermediaries' and policy makers' strategic choices and the planning and evaluation (*ex-ante*; *in-itinere* and *ex-post*) of their interventions (i.e. at meso and macro level).

A1.2. How to navigate through the MIREIA eI2-IAF - Toolkit

In reading this Annex reference should be made to the Main Report - Impact Assessment Framework where the operational tools are presented within the context of the overall MIREIA eI2-IAF. However, the Annex is a self-standing document providing practical instructions on how to use the MIREIA eI2-IAF for self-evaluation of eInclusion intermediaries' interventions on employability². For this purpose, the document first describes briefly the operational components of the MIREIA eI2-IAF, their objectives and how they are structured. It then presents the guidelines on how each operational tool can be implemented, and who should be involved in the process. It presents also examples that have been encountered during the testing of the MIREIA eI2-IAF in the four case studies conducted to test and validate the MIREIA eI2-IAF Toolkit.³

In addition to that, and with specific regard to methodologies for conducting counterfactual impact evaluation, the Annex presents a description and guidelines on how to use the most common techniques and it presents how some of them have been applied in the case studies to test the MIREIA eI2-IAF. This includes a detailed description of the operationalisation of a natural experiment using a Randomised Controlled Trial approach in Italy, and a case of application of a quasi-experimental technique (i.e. Propensity Score Matching) in Spain, as well as a simplified (non-counterfactual) approach for impact evaluation also used in the testing of the MIREIA eI2-IAF in two case studies in Ireland and Poland.

The document concludes with the 'Question bank' extracted from the testing of the MIREIA eI2-IAF reporting all the questionnaires used for the surveys conducted on participants and beneficiaries of the interventions conducted by the case studies under investigation. These include questionnaires developed ad-hoc for assessing the impacts of different interventions - all related to employability - addressing different target groups through a variety of activities. It includes questionnaires administered to 'treated' and 'non-treated' (control group) individuals, at different points in time, according to the methodological approach used. They are an important resource that could be used as a reference for any intermediary to

² As indicated in the Final Report the specific impacts that the Toolkit aims to assess are those related to employability. However, the flexibility of the MIREIA eI2-IAF and the modular approach followed, allows for a further extension of the operational framework and its components to other dimensions of specific impact.

³ The operational tools of the MIREIA eI2-IAF will be further developed in the MIREIA eI2-IAF Handbook which is under preparation to complement the MIREIA eI2-IAF Electronic Toolkit and that will be made available during the course of 2014.

conduct impact evaluation, although in most cases the questionnaires would require an adaptation and contextualisation to the specific intervention under evaluation. At the end of the document a list of acronyms and a glossary of technical terms is also provided.

A2 The Impact Measurement Tool

A2.1. Context Analysis Checklist

The Context Analysis Checklist aims at guiding an eInclusion intermediary in collecting relevant information on the geographical area where it operates for better addressing the target population needs with its interventions. This checklist constitutes an important component of the MIREIA eI2-IAF since it provides input data for all the other three components of the operational framework. In particular the data collected through the checklist help an intermediary in defining:

- the **baselines** of its eInclusion interventions;
- the socio-economic **trends** that could affect the outcomes generated by its interventions;
- the **barriers** and **drivers** hindering or enabling its eInclusion interventions;

The checklist focuses on the external environment of the intervention by examining local characteristics in quantitative terms (providing a list of 39 Eurostat variables that can be used to identify key elements that should be assessed to better understand the socio-economic context of reference in which the intervention is carried out). The analysis of these data should be however complemented by a situational analysis based on qualitative information based for instance on the feedback received from stakeholders and experts or interviews conducted with a sample of the population. To this end the checklist has been designed for collecting qualitative and quantitative data related to four types of variables related to the geographical area in which the intermediary operates:

- **policy context** at EU, national, regional and local level. Here the data collected should help us understand the prevailing policies, strategies, programmes and related funding. This is an important element of the context analysis as it can shape the intermediaries' interventions according to the real needs of the target groups.
- **socio-economic variables**. These characterise the territory in which the intermediary operates and the data collected should help us understand the main trends: e.g. population trends per sex, educational level, etc.; current unemployment rate and trend; current GDP and trend; current GDP per capita and trend. It should be underlined that qualitative information based on the feedback received from stakeholders and experts or interviews conducted with a sample of the population are combined with quantitative data to provide a more comprehensive picture of the intermediary's socio-economic context.
- **digital economy variables**. Here, qualitative and quantitative data will tell us how far the ICT infrastructures and the digital services available have developed in the geographical area in which the intermediary operates. They should also identify to what extent they have been adopted and are being used: e.g. degree of coverage of the ICT network infrastructure; degree of wireless coverage of urban areas; degree of access and usage of internet, diffusion and adoption of eGovernment services; degree of development of other eServices (e.g. eBanking; eCommerce, etc.) in a given territory; share of SMEs with broadband connection; share of employees in ICT sector and trends; nr of SMEs with demand for ICT skilled employees;
- **digital exclusion variables**. Here data is collected which quantifies and qualifies i) the target population in the area of reference that do not have access to and/or do not use ICTs, particularly the Internet, or ii) do not have the needed ICT skills: e.g. share of individuals who have never used a computer or who do not have Internet connection at home, by sex, age, nationality, employment status, educational level, income; or iii) the share of individuals who have digital literacy skills unemployed by sex, age, nationality, educational level;

- **barriers and drivers to the provisioning of eInclusion services.** Data collected on this variable will help us understand the factors influencing the delivery of an intervention by an intermediary in the area where it operates: e.g. number of intermediaries acting in the territory per size and typology, services provided; level of yearly funding available for eInclusion interventions in the territory provided by public and/or private organisations; legal constraints in providing eInclusion services.

A2.1.1. Purpose and content of the checklist

The Checklist enables a robust (and consistent and comparable) statistical insight to many factors associated with nine objective categories of relevance for eInclusion intermediaries' interventions. Data sources examine the conditions in the local economy, ICT access and use, skills, self-employment, inequality and inclusion. Consistent use of these variables by all those using the MIREIA eI2-IAF Toolkit will enable the various local conditions within which intermediaries operate to be robustly compared.

This could provide a better understanding of the extent to which contrasting levels of outputs or outcomes between intermediaries are influenced by 'external' factors. In fact the impacts of an intervention are generally influenced by the local context reflecting the underlying socio-economic dynamics. As an example it is pretty obvious that an intervention such as the one offered by FIT – Fast Track to IT (the case study investigated as part of MIREIA in Ireland) provides better results in terms of placement in Ireland (where the ICT sector is well developed) than, for instance, in Southern Italy (where the ICT sector is not well developed).

Thereby the data collected through the checklist allow assessing to which extent the result of interventions and the challenges encountered are influenced by external conditions, so to plan *ex-ante* interventions according to the socio-economic context of reference, or assess *in-itinere* and *ex-post* the impacts of interventions taking into considerations such factors.

A2.1.2. Who should complete the checklist

Staff members of the intermediaries at the operational level, with a minimum of understanding of statistics and economics, should gather the quantitative data (data can be downloaded easily from the website of Eurostat, the statistical office of the European Union and similar data can be downloaded from national and regional statistical offices. (See more on that in sub-§A2.1.3 and sub-§A2.1.4).

Staff members of the intermediaries at the strategic level should instead be involved in gathering more qualitative information, through interviews, workshops and focus groups with relevant local stakeholders and experts. Both operational and strategic level representatives of the intermediaries should then be involved in the context analysis combining quantitative and qualitative information, possibly involving also high-level representatives of the intermediaries and representatives of local stakeholders from public, private and third sector.

A2.1.3. Description of typologies of quantitative data that could be used in the checklist

Table A1 provides the comprehensive checklist of quantitative data that should be considered for conducting the Context Analysis.

In the first column of Table A1 is reported a list of indicators describing the territorial context, available for downloading from the Eurostat database. The indicators are classified according to five main categories:

- Internet Access and Use
- Basic and Advanced Digital Skills development
- Self-employment and Business Start-ups
- Equality and Inclusion
- Economic Circumstances

In the second column of the Table are reported:

- the geocode standard for referencing the subdivisions of countries for statistical purposes according to the **NUTS classification (Nomenclature of territorial units for statistics)** which is a hierarchical system for dividing up the economic territory of the EU for the purpose of: collection, development and harmonisation of EU regional statistics; and socio-economic analyses of the regions.⁴ This geocode is classified according to three levels of NUTS defined:
 - NUTS 1: group of NUTS 2
 - NUTS 2: Region/Province/State/Prefecture (including: autonomous type)
 - NUTS 3: Parish/Canton/Oblast/City and Regency/County/Municipality

- The **Nomenclature of economic activities in the European Union (NACE)**. This is a four-digit classification providing the framework for collecting and presenting a large range of statistical data according to economic activity in the fields of economic statistics (NACE Rev. 2 is the revised classification adopted at the end of 2006)⁵.

In the third column are reported the Eurostat database codes related to each indicator.

In the final column of the table is reported the group in which the data sets falls (i.e. **metadata**). There are eight different groups:

- a) Data on the usage of ICT by individuals (metadata 1)
- b) Data on telecommunications services (metadata 2)
- c) Data on ICT usage by enterprises (metadata 3):
- d) Data on labour force (metadata 4)
- e) Data on income and living conditions (metadata 5)
- f) Data on the outcomes and returns over education (metadata 6)
- g) Data on population in jobless households (metadata 7)
- h) Data provided by the Local Government Services (metadata 8)

A brief description of each of the metadata types is provided below.

a) Data on the usage of ICTs by individuals (metadata 1):

Datasets provided in this domain are collected by the National Statistical Institutes or Ministries of Member States and are based on Eurostat's annual questionnaires on ICT usage in households and by individuals.

The aim of the European ICT surveys is the timely provision of statistics on individuals and households on the use of ICTs at European level. Data for this collection are supplied directly from the surveys with no separate treatment.

The characteristics to be provided are drawn from the following list of subjects: - access to and use of ICTs by individuals and/or in households, - use of the Internet and other electronic networks for different purposes by individuals and/or in households, - ICT security and trust, - ICT competence and skills, - barriers to the use of ICT and the Internet, - perceived effects of ICT usage on individuals and/or on households, - use of ICT by individuals to exchange information and services with governments and public administrations (e-government), - access to and use of technologies enabling connection to the Internet or other networks from anywhere at any time (ubiquitous connectivity).

b) Data on telecommunications services (metadata 2):

Access to networks (in thousands) provides the number of main telephone lines and subscriptions to the services of the operators offering mobile telecommunication services and the number of leased lines, ISDN subscriptions, DSL subscriptions, Internet subscriptions and subscriptions to cable networks enabling internet use, number of connections to telecommunication networks through electricity networks (Power

⁴ See: http://epp.eurostat.ec.europa.eu/portal/page/portal/nuts_nomenclature/introduction

⁵ The list of NACE codes can be found at http://ec.europa.eu/competition/mergers/cases/index/nace_all.html

Line Communication - PLC), subscriptions to mobile telecommunication systems enabling use of UMTS and the number of users of Voice over Internet Protocol telephony, in thousands.

Access to networks (per 100 inhabitants) gives the number of main telephone lines and subscriptions to the services of the operators offering mobile telecommunication services per 100 inhabitants.

c) Data on ICT usage by enterprises (metadata 3):

As it is the case of ICT usage by individuals, datasets provided in this domain are also collected by the National Statistical Institutes or Ministries and are based on Eurostat's annual surveys on ICT usage and e-commerce in enterprises.

The aim of the European ICT usage surveys is to collect and disseminate harmonised and comparable information on the use of ICTs in enterprises and e-commerce at European level. Data for this collection are supplied directly from the surveys with no separate treatment.

d) Data on labour force (metadata 4):

Information on regional labour markets is provided by the EU Labour Force Survey (EU LFS), which is a quarterly household sample survey conducted in all 27 Member States of the EU and in EFTA and Candidate countries that provides data down to the NUTS level 2 on the European labour aggregates.

The survey is built upon the basis of definitions and recommendations formulated by the International Labour Organisation (ILO) with the objective of harmonizing practices and principles among Member States regarding the labour force. The target population covered by the survey refers to individuals in private households aged 15 and over, while the geographical breakdown of the data allows for a good degree of comparability of indicators.

Data regarding labour force is collected quarterly and covers all main labour market characteristics: i.e. Total population; Activity and activity rates; Employment; Employment rates; Self-employed; Employees; Temporary employment; Full-time and part-time employment; Population in employment having a second job; Working time; and Total unemployment and inactivity. In addition the data is produced in accordance with relevant international classification systems such as NACE (Rev.1 and Rev. 2) for economic activity, ISCO (88 and 08) for occupation and ISCED for the level of education.

e) Data on income and living conditions (metadata 5):

Datasets concerning the domain of income and living conditions refer to different themes of statistics regarding risk of poverty or social exclusion, distribution of income across the population, living conditions and material deprivation. Indicators regarding the population at risk of poverty or social exclusion reflect the interest described in the Europe 2020 strategy with respect to poverty conditions and inclusion. They also reflect the intersections between sub-populations of all Europe 2020 indicators on poverty and social exclusion.

Indicators regarding the distribution of income and poverty reflect the risk of poverty within the population at individual and household levels. Indicators regarding living conditions refer to the characteristics of the population in terms of health and labour conditions as well as other welfare indicators such as child care benefits. Finally, indicators regarding material deprivation refer to economic struggle of the population, deprivation of durable goods, housing deprivation and the inhabited environment.

f) Data on the outcomes and returns over education (metadata 6):

Information regarding returns over education covers different statistics in the field of educational attainment and the benefits obtained. Indicators, such as transition from education to work and early leavers from education and training, act as metrics reflecting the return over education.

The datasets are based on the quarterly results of the EU Labour Force Survey described above, though it has been enriched, where necessary, with adjustments regarding correction of the main breaks in the LFS series and estimation of the missing values (in case of missing quarters), through interpolations with reference to the available quarters.

g) Data on population in jobless households (metadata 7):

Indicators regarding population in jobless households are also based on the EU Labour Force Survey. They also represent Sustainable Development Indicators.

h) Data provided by the Local Government Services (metadata 8) (not included in Table A1):

Indicators such as those related to: the presence of intermediaries in the territory; the services provided by the intermediaries; the existence of legal constraints in providing inclusion services by the intermediaries; the level of funding that intermediaries can access for providing their services, that are very peculiar to the reference context, are provided by local government services or statistics according to different level of granularities. They represent specific data of the local context that are not available in statistics at EU level.

Table A1 –Examples of quantitative data to be collected through the Context Analysis Checklist

Indicator	Scale	Eurostat Code	Metadata
Internet Access and Use			
Households with access to the Internet at home	NUTS 2	isoc_r_iacc_h	1
Households with broadband access	NUTS 2	isoc_r_broad_h	1
Individuals regularly using the Internet	NUTS 2	isoc_r_iuse_i	1
Individuals who have never used a computer	NUTS 2	isoc_r_cux_i	1
Individuals who ordered goods or services over the Internet for private use	NUTS 2	isoc_r_blt12_i	1
Digital Inclusion - individuals		isoc_bdek_di	1
Reasons for not having Internet access at home		isoc_pibi_rni	1
Reasons for not having broadband access at home		isoc_pibi_rnb	1
Places for accessing Internet		isoc_pibi_pai	1
Telecommunication services: access to networks (in thousands)		isoc_tc_ac1	2
Telecommunication services: access to networks (per 100 inhabitants)		isoc_tc_ac2	2
Households - level of Internet access		isoc_ci_in_h	1
Households - devices to access the Internet		isoc_ci_id_h	1
Individuals - mobile Internet access		isoc_ci_im_i	1
Basic and Advanced Digital Skills development			
E-Skills		isoc_bde15csk	1
Percentage of persons employed with ICT user skills		isoc_ic_biski	3
Percentage of persons employed with ICT specialist skills		isoc_ic_bispe	3
Individuals' level of computer skills		isoc_sk_cskl_i	1
Individuals' level of Internet skills		isoc_sk_iskl_i	1
Way of obtaining e-Skills		isoc_sk_how_i	1
Reasons for not having taken a computer course		isoc_sk_rnct_i	1
Most recent training course on computer use		isoc_sk_rtc_i	1
Enterprises that recruited or tried to recruit personnel for jobs requiring ICT skills	NACE Rev. 2	isoc_ske_itcrn2	3
Enterprises that provided training to develop/upgrade ICT skills of their personnel	NACE Rev. 2	isoc_ske_ittn2	3
Self-employment and Business Start-ups			
Self-employment by sex, age and highest level of education attained (in thousands)		lfsa_esgaed	4
Self-employment by sex, age and nationality (in thousands)		lfsa_esgan	4
Self-employment by sex, age and country of birth (in thousands)		lfsa_esgacob	4
Self-employment by sex, age and highest level of education attained (in thousands)		lfsa_esgaed	4
Self-employment by sex, age and economic activity (in thousands, from 2008)	NACE Rev. 2	lfsa_esgan2	4

Equality and Inclusion			
Inequality of income distribution		tsdsc260	5
Dispersion of regional unemployment rates	NUTS 3	lfst_r_lmdur	4
Dispersion of regional employment rates by age group	NUTS 3	lfst_r_lmder	4
Early leavers from education and training by sex and unemployment status		edat_lfse_15	6
Early leavers from formal education and training by regions	NUTS 2	edat_lfse_16	6
Population in jobless households		lfsi_jhh_a	7
Economic Circumstances			
Real growth rate of regional GDP at market prices by NUTS 2 regions	NUTS 2	tgs00037	4
Real GDP per capita, growth rate and totals		tsdec100	4
Unemployment rates by sex, age and NUTS 2 regions	NUTS 2	lfst_r_lfu3rt	4
Dispersion of regional unemployment rates by NUTS 3 regions (%)	NUTS 2	Lfst_r_lmdur	4

In Table A2 we report the links to the descriptions of metadata available on the website of Eurostat.

Table A2 - Links to the metadata descriptions on Eurostat's website

Eurostat Code	Links to the Eurostat website
Data on the usage of ICT by individuals (metadata 1)	http://epp.eurostat.ec.europa.eu/cache/ITY_SDDS/DE/isoc_bde15c_esms.htm
Data on telecommunications services (metadata 2)	http://epp.eurostat.ec.europa.eu/cache/ITY_SDDS/EN/isoc_tc_hist_esms.htm
Data on ICT usage by enterprises (metadata 3):	http://epp.eurostat.ec.europa.eu/cache/ITY_SDDS/EN/isoc_bde15d_esms.htm
Data on labour force (metadata 4)	http://epp.eurostat.ec.europa.eu/cache/ITY_SDDS/EN/reg_lmk_esms.htm
Data on income and living conditions (metadata 5)	http://epp.eurostat.ec.europa.eu/cache/ITY_SDDS/EN/ilc_esms.htm
Data on the outcomes and returns over education (metadata 6)	http://epp.eurostat.ec.europa.eu/cache/ITY_SDDS/EN/edat_esms.htm
Data on population in jobless households (metadata 7)	http://epp.eurostat.ec.europa.eu/cache/ITY_SDDS/EN/lfsi_jhh_a_esms.htm

A2.1.4. How to download the quantitative data that could be used in the checklist

The data can be downloaded by using the links provided in Table A3, which refer to the Eurostat website.

Table A3 - Link for downloading the data of the context analysis checklist

Eurostat Code	Links for downloading the data
Internet Access and Use	
isoc_r_iacc_h	http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=isoc_r_iacc_h&lang=en
isoc_r_broad_h	http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=isoc_r_broad_h&lang=en
isoc_r_iuse_i	http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=isoc_r_iuse_i&lang=en
isoc_r_cux_i	http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=isoc_r_cux_i&lang=en
isoc_r_blt12_i	http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=isoc_r_blt12_i&lang=en
isoc_bdek_di	http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=isoc_bdek_di&lang=en
isoc_pibi_rni	http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=isoc_pibi_rni&lang=en
isoc_pibi_rnb	http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=isoc_pibi_rnb&lang=en
isoc_pibi_pai	http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=isoc_pibi_pai&lang=en
isoc_tc_ac1	http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=isoc_tc_ac1&lang=en
isoc_tc_ac2	http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=isoc_tc_ac2&lang=en
isoc_ci_in_h	http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=isoc_ci_in_h&lang=en
isoc_ci_id_h	http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=isoc_ci_id_h&lang=en
isoc_ci_im_i	http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=isoc_ci_im_i&lang=en
Basic and Advanced Digital Skills development	
isoc_bde15csk	http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=isoc_bde15csk&lang=en
isoc_ic_biski	http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=isoc_ic_biski&lang=en
isoc_ic_bispe	http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=isoc_ic_bispe&lang=en
isoc_sk_cskl_i	http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=isoc_sk_cskl_i&lang=en
isoc_sk_iskl_i	http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=isoc_sk_iskl_i&lang=en
isoc_sk_how_i	http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=isoc_sk_how_i&lang=en
isoc_sk_rnct_i	http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=isoc_sk_rnct_i&lang=en
isoc_sk_rtc_i	http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=isoc_sk_rtc_i&lang=en
isoc_ske_itrcrn2	http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=isoc_ske_itrcrn2&lang=en
isoc_ske_ittn2	http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=isoc_ske_ittn2&lang=en
Self-employment and Business Start-ups	
lfsa_esgaed	http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=lfsa_esgaed&lang=en
lfsa_esgan	http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=lfsa_esgan&lang=en
lfsa_esgacob	http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=lfsa_esgacob&lang=en
lfsa_esgaed	http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=lfsa_esgaed&lang=en
lfsa_esgan2	http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=lfsa_esgan2&lang=en
Equality and Inclusion	
tsdsc260	http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&plugin=1&language=en&pcode=tsdsc260
lfst_r_lmdur	http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=lfst_r_lmdur&lang=en
lfst_r_lmder	http://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do
edat_lfse_15	http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=edat_lfse_15&lang=en
edat_lfse_16	http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=edat_lfse_16&lang=en
lfsi_jhh_a	http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=lfsi_jhh_a&lang=en

Economic Circumstances	
tgs00037	http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&language=en&pcode=tgs00037
tsdec100	http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&plugin=1&language=en&pcode=tsdec100
lfst_r_lfu3rt	http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=lfst_r_lfu3rt&lang=eng
Lfst_r_lmdur	http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=lfst_r_lmdur&lang=en

A2.1.5. Qualitative situational analysis

As anticipated above, quantitative data for analysing the socio-economic context of reference and main trends relevant for the interventions to be developed/monitored or evaluated, should be complemented by a qualitative situational analysis. This analysis should be conducted in consultation with relevant stakeholders and experts, and involving representatives of the intermediaries at various levels (policy, strategic, operational, finance).

To support such process of analysis, which can be structured with workshops, meetings, interviews and focus groups, it is useful to develop, as a supporting guide, a simple **Project Fiche**. A template for such Project Fiche is reported in Table A4 below. It can be used by the representatives of an intermediary, at strategic and operational level, as a structured guide to check: *ex-ante*, what type of interventions should be designed to have a positive impact on the context of reference, based on the resources available and the socio-economic characteristics present in the area of intervention. In this respect it is strictly linked also to the system of measurement indicators (see §A2.2) that will be useful to define and estimate indicators of output-outcome-impact related to the intervention/s.

The Project Fiche also helps during the execution of interventions to gather all relevant information on the intervention/s to be monitored and evaluated, including structuring which data of the selected intervention have to be gathered for using the MIREIA measurement tool for in-itinere and ex-post impact assessment (see §A2.4). Moreover, it provides the intermediaries, external stakeholders and evaluators an overview of the context in which the intermediary operates and the interventions are undertaken. More in particular it enables a robust (i.e. consistent and comparable) insight to the particular characteristics of an intermediary and their goals, objectives and operations. It also enables those assisting the impact measurement activities of the intermediary's intervention/s to better understand the internal strategic capacities of the intermediary, its objectives and the relations with the eInclusion interventions carried out.

For this purpose, the Project Fiche should consider the local context by examining the local policy situation for intervention excerpted by the indicators on the local economy described above (see A2.1.1), but also helping to conduct an Analysis of the Strengths, Weaknesses, Opportunities and Threats (**SWOT Analysis**) to better understand the current and prospective situation of the intermediary within the context of reference and how the planned/ongoing interventions are aligned with both the strategic/organizational and context/policy developments.

Similarly to the definition of the Project Fiche, the SWOT Analysis should be conducted in consultation with relevant stakeholders and experts, and involving representatives of the intermediary at various levels (policy, strategic, operational, finance). In addition to that, results should be presented for discussion with the overall staff of the intermediary and if relevant with the public or representative of stakeholders and citizens, so to gather feedback from external actors on the strategic/policy interventions planned or under implementation, and how they address the needs of the target groups and the context in which the intermediary operates.

Table A4 - Project Fiche - Template

1. Context and Objectives	
1.1 Dimension of specific impact	<input type="checkbox"/> Skilling; <input type="checkbox"/> Empowerment; <input type="checkbox"/> Networking; <input type="checkbox"/> Job placement
1.2 Quantitative Dimensions of analysis of the reference context	<ul style="list-style-type: none"> ▪ Usage of ICT by individuals ▪ Telecommunications services ▪ ICT usage by enterprises ▪ Labour force ▪ Income and living conditions ▪ Outcomes and returns over education ▪ Population in jobless households
1.3 Target groups identification	<ul style="list-style-type: none"> ▪ Which are the target groups in relation to the chosen dimension of specific impacts? ▪ Which are their needs? ▪ Which is their size? ▪ Which is their relative importance? ▪ Other (specify)
1.4 Stakeholders' map	<ul style="list-style-type: none"> ▪ Which are the relevant stakeholders in the reference context? ▪ Are they relevant for the chosen dimension of specific impacts? ▪ Which interventions are they willing to sustain (economically or in other forms) in relation to the chosen dimension of impacts? ▪ Which is the best engagement strategy to be implemented?
1.5 SWOT analysis	<ul style="list-style-type: none"> ▪ STRENGTHS ▪ What are the strengths of the selected intervention? How long into the future is it funded for and/or what is your planning horizon? ▪ WEAKNESSES ▪ What significant drawbacks and problems have you identified that could hinder the achievement of impacts of the intervention? ▪ THREATS ▪ What are the key threats to the future success of the intervention? ▪ OPPORTUNITIES ▪ What opportunities could arise to help you improve the achievement of impacts of the intervention?
1.6 Summary of Context Analysis	<ul style="list-style-type: none"> ▪ Does the context analysis include standard statistics? Yes/ no (if yes please include them); ▪ Does the context analysis contain new statistics produced ad hoc? Yes/ no (if yes, please include them) ▪ Does the context analysis provide quantitative information on the target groups? E.g. # of possible users (per target group) in the area of reference; ▪ How is the quantification derived? ▪ Does the context analysis provide qualitative information? Yes/ no (if yes please include how it has been conducted)
2. What is the Intervention?	
2.1 Brief description of the intermediary	<ul style="list-style-type: none"> ▪ What are the mission and the objective(s) of the intermediary? ▪ When was the intermediary established? ▪ What is the organisational structure (Private for profit; Private Non-Profit Organisation; Public, Public-Private, Other)? ▪ Please describe the managerial structure and provide an organisation chart with roles and responsibilities. ▪ Are there similar intermediaries in your local geographical area (e.g. 10/100 km²)?
2.2 Brief description of the intervention/s	<ul style="list-style-type: none"> ▪ What is the objective(s) of the intervention(s)? ▪ What is/are the product(s) or service(s) you provide? ▪ Who are the beneficiaries of the intervention(s)? ▪ Are there similar projects in your local geographical area (10 km) ▪ Does the intervention fit within a local strategy or plan of eInclusion / employability? If Yes describe how? If No describe why not?

	<ul style="list-style-type: none"> ▪ Who are the partners and stakeholders of the intervention? What are their roles? ▪ How does the intervention differ from alternative solutions targeting the same group/segment of population?
2.3 Expected results (i.e. outputs, direct-outcomes)	<ul style="list-style-type: none"> ▪ What are the key outputs and outcomes you aim to achieve with the intervention(s)? ▪ What indicators are you using to measure outputs and direct outcomes? (extract starting from the examples contained in the System of Measurement Indicators a full list of all possible outputs and direct outcomes. If needed integrate it with other more appropriate or additional/complementary indicators). ▪ Are there other benefits that the intervention(s) will produce? If Yes, what are they? ▪ What are the expected targets for these outputs and outcomes? ▪ How have you estimated/quantified such targets? ▪ How well are you performing against these targets? ▪ What evidence do you have for the effectiveness or impact of your intervention?
2.4 Indirect effects (i.e. indirect outcomes)	<ul style="list-style-type: none"> ▪ Which kind of indirect results can be generated by the outputs of the intervention(s) on the beneficiaries in the short-term perspective beside those already identified?
2.5 Future developments	<ul style="list-style-type: none"> ▪ What, with a little extra resource (20% of your operating budget) would you do to improve the intervention?
3. Estimation of Impacts (ex-ante) and/or Impact Evaluation (in-itinere/ex-post)	
3.1 Expected impacts	<ul style="list-style-type: none"> ▪ Please extract starting from the examples contained in the System of Measurement Indicators a full list of all possible potential positive impacts that can be produced by the selected intervention(s). ▪ How will you know when the problem you are addressing is solved? ▪ Which mid-long term impacts they can generate beside those already identified by using the System Measurement Indicators?
3.2 Causality links	<ul style="list-style-type: none"> ▪ Please identify and describe the main causality links behind the impacts? ▪ Have you used / are you using any formal impact evaluation method to demonstrate cause-effects relationships of your intervention/s? If Yes which methods are you using, such as for instance: <ul style="list-style-type: none"> - Randomised controlled trials; - Propensity score matching; - Other counterfactual approaches; - Informal inference (use of rates, analogies, rule of thumb, etc.) - Other methods
3.4 Quantitative evidence	<ul style="list-style-type: none"> ▪ List the impacts for which the indicators provide quantitative evidence and specify which are (common) indicators of the System of Measurement Indicators and which are new specific indicators defined.
3.5 Qualitative evidence	<ul style="list-style-type: none"> ▪ List the impacts for which the indicators provide qualitative evidence. If some impacts are not quantifiable but are considered relevant for your monitoring and evaluation activity. Describe the logic that you adopt/propose for their measurement.

A2.2. System of measurement indicators

In this section is presented the **system of measurement indicators** providing per each typology of intervention aiming at enhancing employability a set of indicators. These are aimed at assessing if the intervention has reached the expected results, such as input necessary to conduct the intervention, the inputs quantifying the size of intervention relatively to the target group, the outputs produced by the intervention, the outcomes of the intervention and specific and global impacts.

A2.2.1 Purpose and content of the system of indicators

The system of measurement indicators aims at assisting the intermediaries in monitoring and measuring their interventions in relation to the resources allocated (input), the related services delivered to a target population (outputs), the direct and indirect outcomes generated and the estimated contribution to specific and global impacts. In this respect, the system of measurement indicators developed for the operational framework of the MIREIA eI2-IAF, which focuses specifically on employability, contains a set of indicators that have been extracted from review of literature and practice, as well as from the case studies in which the MIREIA eI2-IAF has been tested.

For this reason the selection of measurement indicators can vary according to the characteristics and the nature of each eInclusion intervention. This choice to not opt for a fixed set of predefined measurement indicators allows the Impact Measurement Tool to be more flexible and to be self-used by any typology of intermediary and any typology of eInclusion intervention related to employability.

The system of measurement indicators is structured as follows:

- **Input indicators**, available within intermediary organisations budget, programming, and accounting documents, relate to resources allocated to each specific intervention and to the set of interventions focusing on eInclusion.
- **Output indicators**, which represent the immediate result of interventions and data about their progresses and are reported in monitoring documents of each intervention.
- **Outcome Indicators**, distinguishing between direct and indirect benefits that the excluded groups targeted can gain from the intermediary's interventions.
- **Specific Impact Indicators**, structured according to the dimensions of specific impact that have been identified as employability relevant.
- **Global Impact Indicators**, allowing the estimation of the contribution that those interventions are having in terms of global impact on the employment situation of the context where the interventions have been implemented.

The complete system of measurement indicators focusing on the specific impact dimension of **employability** is presented in Table A5 below. It provides a practical tool that can be self-used by intermediaries and relevant stakeholders proposing basic common indicators which are measurable in quantitative terms on the basis of data that the intermediaries and/or stakeholders can easily gather from the interventions. These indicators could be used also for comparison of interventions in different contexts.

Indeed the set of indicators can be further expanded and additional indicators, more specific and appropriate to different contexts, could be developed and used, provided they are available or data for their construction can be easily derived from local statistics or management processes implemented by intermediaries. However the proposed set of measurement indicators already offer a quite wide range of choice in measuring the impact of eInclusion interventions since they have been already extensively used by the intermediaries that have been involved in the case studies and have provided positive feedback in relation to their relevance in their current practices.

A2.2.2 Who should use the tool

The definition of objectives of interventions is normally made according to a hierarchy approach (e.g. global, specific, strategic, operational) which points to the need for a corresponding hierarchical system of measurement indicators. Clearly this is not just a technical issue, thus, in general terms, staff of the intermediaries at policy/strategic/operational levels should be involved in the definition and selection of indicators, if required, with the support of external experts and/or researchers and possibly involving representatives of stakeholders for gaining external perspectives, especially when defining the relevant indicators to be used as part of the process of ex-ante evaluation (see later the Operationalisation of the Impact Measurement Tool in Table A7).

Indicators about inputs and outputs can be then collected by any typology of intermediaries, while outcomes and impacts indicators are usually collected by medium-large size of intermediaries or structured networks of intermediaries, due to the cost and resources needed to conduct regular or ad hoc surveys.

A2.2.3 How to use the tool

The system of measurement indicators serves as the basis for monitoring progresses of interventions and supporting the assessment of the achievement of planned results, in terms of outputs and direct/indirect outcomes generated and the contribution they are having on achieving specific and global impacts. In practice they can be used as tools to assess how far the expected objectives have been achieved by single interventions or by an aggregated coherent set of interventions (i.e. programme). The assessment of impact, the extent to which an intervention or programme has achieved its strategy objectives, is built up from the outputs and outcomes of individual interventions.

Indicators should be specific, measurable, attainable in a cost effective way, relevant for the programme, and traceable (SMART). This is the logic underpinning the choice of indicators of the MIREIA eI2-IAF and that gives as main advantage the fact that it considers indicators that can be directly collected by the intermediaries in their usual practices, allowing to be used as self-evaluation tool by the intermediary itself.

Indicators should be quantified (*ex-ante*) to estimate expected outputs, outcomes and impacts that could be achieved by the intervention or set of interventions. On the basis of such estimations (target indicators associated to the hierarchy of objectives addressed by the intervention / set of interventions) the indicators serves to measure progresses (*in-itinere*) and evaluate if what the intervention / set of interventions have achieved is in line with what was planned (*ex-post*), in terms of outputs, outcomes (direct and indirect) and specific impacts.

In particular, while quantifying the indicators one should first estimate the impact at the level of direct and indirect beneficiaries of the interventions on the basis of outputs and outcome indicators, survey data, experience and evaluations from previous programming periods, and in a second stage, it has to be carried out an estimation of the contribution to general trends at programme/policy level.

In practical terms, inputs and outputs indicators should be measured on a regular basis using data available to the intermediaries. Indicators of outcome and specific impact instead require conducting surveys of beneficiaries of the intervention/s that can be conducted by the intermediaries through online questionnaires or emails, CATI, direct phone calls, but also on paper.

Finally, global impact indicators are not directly used to measure the impact achieved by an intervention, but instead allow understanding the intervention logic of the intermediaries' actions and how this is contributing to achieve structural changes in the area of interventions (e.g. in terms of contributing to increase in employment rate or local economic development).

With specific regard to **global impact indicators**, these are common to all interventions and the most used indicators that could be used for assessing the contribution of interventions focusing on employability are the following:

- % of increase in local economic development (i.e. GDP growth) in the reference context
- % of increase of employment rate in the reference context (ICT related and not ICT related)

Other indicators to measure the global impact of interventions could also be derived, such as for instance

- % of increase of the value of employment (measured through increase of wage of employed people) in the reference context (ICT related and not ICT related)

However, it should be made clear that although these global impact indicators are referred to in the system of measurement indicators in order to provide a clear understanding of the overall intervention logic of the intermediaries, they cannot be used directly as indicators to measure the impacts achieved.

As the fieldwork experience and the literature suggest these global impacts are in fact more difficult to measure since they require the use of complex measurement models (e.g. multiple-equilibrium models) that can measure the combined effects of a large numbers of socio-economic variables. Moreover the

validity of the results provided by such models is highly affected by the socio-economic stability of the reference context.

Therefore the Impact Measurement Tool has been designed to measure the **specific impacts** of the intermediaries' interventions and their relation with the required inputs, the outputs that are produced and the direct outcomes and specific impacts of the interventions themselves, while the relation with the contribution interventions make to global impacts requires additional instruments.

Table A5 - System of Measurement Indicators for Employability

Typologies of Interventions	Input indicators	Output indicators	Direct Outcome Indicators	Indirect Outcome Indicators	Specific Impact indicators	
Skilling	<ul style="list-style-type: none"> ▪ Basic Digital literacy training courses ('medium-related' skills including operational and formal Internet skills) 	<ul style="list-style-type: none"> - # of participants enrolled in the training course - Cost of the intervention (per activity: promotion, design, deployment, monitoring and evaluation) - Human Resources allocated (hours spent for teaching, tutoring, exercising, design and managing of the course) - Material Resources allocated (e.g. cost of venue, equipment, training material, etc.) 	<ul style="list-style-type: none"> - # of participants in ICT basic training course who completed the training 	<ul style="list-style-type: none"> - # of users of basic training course achieving evidence of skills progression - # of job offers (ICT related) received after the basic ICT training course 	<ul style="list-style-type: none"> - # of participants to the course that achieved an increase in their level of confidence of use of ICT beyond working activities (e.g. Internet surfing; access to eBanking; eCommerce;; eGovernment or other eServices) - # of participants progressing to advanced ICT courses - # of participants progressing to further education (ICT or non ICT related) 	<ul style="list-style-type: none"> - # of participants in ICT basic training courses that have actually found a job (ICT related) - # of participants in ICT basic training course that have actually increased their wage and/or job position
	<ul style="list-style-type: none"> ▪ Advanced ICT skills development (both 'medium-related' and 'content-related' skills including information and strategic internet skills) 	<ul style="list-style-type: none"> - # of participants enrolled in ICT advanced training course - Cost of the intervention (per activity: promotion, design, deployment, monitoring and evaluation) - Human Resources allocated (hours spent for teaching, tutoring, exercising, design and managing of the course) - Material Resources allocated (e.g. cost of venue, equipment, training material, etc.) 	<ul style="list-style-type: none"> - # of participants in ICT advanced training course who completed the training 	<ul style="list-style-type: none"> - # of users of advanced training course achieving evidence of skills progression - # of job offers ICT related) received after the advanced ICT training courses 	<ul style="list-style-type: none"> - % of increase in Internet usage in the area of intervention - # of participants to the intervention that achieved an increase in their level of confidence of use of ICT beyond working activities (e.g. Internet surfing; access to eBanking; eCommerce;; eGovernment or other eServices) - # of participants progressing to further education (ICT or non ICT related) 	<ul style="list-style-type: none"> - # of participants in ICT advanced training course that have actually found a job (ICT related) - # of participants in ICT advanced training course that have actually increased their wage and/or job position
	<ul style="list-style-type: none"> ▪ Awareness raising interventions for promoting ICT career 	<ul style="list-style-type: none"> - # of beneficiaries of the intervention - Cost of the intervention (per activity: promotion, design, deployment, monitoring and evaluation) - Human Resources allocated (hours spent for teaching, tutoring, exercising, design and managing of the course) - Material Resources allocated (e.g. cost of venue, equipment, training material, etc.) 	<ul style="list-style-type: none"> - # of participants having completed the specific ICT skills awareness actions 	<ul style="list-style-type: none"> - # of participants that expressed interest in following an university degree leading to an ICT career - # of subscriptions to university degrees leading to ICT careers done by the participants to the awareness action 	<ul style="list-style-type: none"> - % of increase of requests to join university degrees leading to ICT career 	<ul style="list-style-type: none"> - # of participants in ICT awareness action that have actually found a job (ICT related) - # of s university degrees leading to ICT careers obtained by the participants to the awareness action
	<ul style="list-style-type: none"> ▪ ICT Skills certification (based on standards requested by the ICT sector) 	<ul style="list-style-type: none"> - # of beneficiaries of the intervention - Cost of the intervention (per activity: promotion, design, deployment, monitoring and evaluation) - Human Resources allocated (hours spent for teaching, tutoring, exercising, design and managing of the course) - Material Resources allocated (e.g. cost of venue, equipment, training material, etc.) 	<ul style="list-style-type: none"> - # of participants of the ICT skills certification interventions that have completed the courses 	<ul style="list-style-type: none"> - # of beneficiaries of interventions with certified increased ICT skills that are available on the job market 	<ul style="list-style-type: none"> - % of increase in ICT skills professionals in the area of intervention 	<ul style="list-style-type: none"> - # of participants in certification action that have actually found a job (ICT related) - #of participants in ICT skills certification intervention that have actually increased their wage and/or job position

Typologies of Interventions		Input indicators	Output indicators	Direct Outcome Indicators	Indirect Outcome Indicators	Specific Impact indicators
Empowerment	<ul style="list-style-type: none"> ▪ Intervention aimed at improving entrepreneurship and self-employment 	<ul style="list-style-type: none"> - # of beneficiaries of the intervention - Cost of the intervention (per activity: promotion, design, deployment, monitoring and evaluation) - Human Resources allocated ((hours spent for providing the intervention, hours spent for design and managing the intervention) - Material Resources allocated (e.g. cost of venue, equipment, training material, etc.) 	<ul style="list-style-type: none"> - # of projects having completed the intervention on entrepreneurship / self-employment 	<ul style="list-style-type: none"> - # of beneficiaries assisted on entrepreneurship and self-employment that proceeded further in their business creation activity (i.e. active one year after intervention) - # of projects for ICT-related/enabled entrepreneurship / self-employment started after the intervention 	<ul style="list-style-type: none"> - # of new enterprises/business activities created/established on the area of intervention 	<ul style="list-style-type: none"> - # of ICT related enterprises and business activities derived from projects having completed the intervention
	<ul style="list-style-type: none"> ▪ Intervention on promoting ICT-enabled social innovation 	<ul style="list-style-type: none"> - # of beneficiaries of the intervention - Cost of the intervention (per activity: promotion, design, deployment, monitoring and evaluation) - Human Resources allocated (hours spent for providing the intervention, hours spent for design and managing the intervention) - Material Resources allocated (e.g. cost of venue, equipment, training material, etc.) 	<ul style="list-style-type: none"> - # of projects having developed an ICT-enabled social innovation activity at the end of the intervention 	<ul style="list-style-type: none"> - # of beneficiaries assisted on ICT-enabled social innovation activities that proceeded further in their activity (i.e. active one year after intervention) - # of projects for ICT-enabled social innovation started after the intervention 	<ul style="list-style-type: none"> - # of new social innovation activities created/established on the area of intervention 	<ul style="list-style-type: none"> - # of projects developed by the intervention that have done financial investment devoted to ICT related social innovation - # of participants to the social innovation project developed by the intervention that have actually increased their income/improved their Job conditions
	<ul style="list-style-type: none"> ▪ Intervention aimed at promoting Internet use for job searching (e.g. training course) 	<ul style="list-style-type: none"> - # of beneficiaries of the intervention - Cost of the intervention (per activity: promotion, design, deployment, monitoring and evaluation) - Human Resources allocated (hours spent for providing the intervention, hours spent for design and managing the intervention) - Material Resources allocated (e.g. cost of venue, equipment, training material, etc.) 	<ul style="list-style-type: none"> - # of participants having successfully completed their participation to the intervention 	<ul style="list-style-type: none"> - # of participants achieving an increase in their level of confidence of use of ICT for job searching 	<ul style="list-style-type: none"> - # of relatives and members of the community of belonging of the participants to the intervention that have benefitted of their help in job searching - % of increase in eLearning /informal learning offer in the area of intervention 	<ul style="list-style-type: none"> - # of participants to the intervention/training course that have actually found a job (ICT related and not ICT related) - #of participants in the intervention/training course that have actually increased their wage and/or job position
	<ul style="list-style-type: none"> ▪ Intervention aimed at promoting the use of Internet centres for job searching 	<ul style="list-style-type: none"> - # of beneficiaries of the intervention - Cost of the intervention (per activity: promotion, design, deployment, monitoring and evaluation) - Human Resources allocated (hours spent for providing the intervention, hours spent for design and managing the intervention) - Material Resources allocated (e.g. cost of venue, equipment, training material, etc.) 	<ul style="list-style-type: none"> - # of participants that have become regular users of public and/or private Internet centres or using ICT facilities provided by intermediaries 	<ul style="list-style-type: none"> - # of regular users to public and/or private Internet centres facilities or intermediaries that access ICTs for job searching that have increase in access to job related information and increase in ICT related job search capabilities - % of increase of job offers (ICT related and not ICT related) received after accessing public and/or private Internet centres facilities of the intermediaries 	<ul style="list-style-type: none"> - # of relatives and members of the community of belonging of the participants to the intervention that have benefitted of their help in job searching - % of increase in eLearning /informal learning offer in the area of intervention 	<ul style="list-style-type: none"> - # of participants to the intervention who became regular users of public or private Internet centres of the intermediaries that have actually found a job (ICT related and not ICT related) - # of participants to the intervention who became regular users of public or private Internet centres of the intermediaries that have actually increased their wage and/or job position

Typologies of Interventions		Input indicators	Output indicators	Direct Outcome Indicators	Indirect Outcome Indicators	Specific Impact indicators
Networking	<ul style="list-style-type: none"> Intervention aimed at increasing competitiveness of SMEs and micro organisations through ICT use 	<ul style="list-style-type: none"> # of beneficiaries of the intervention Cost of the intervention (per activity: promotion, design, deployment, monitoring and evaluation) Human Resources allocated (hours spent for providing the intervention, hours spent for design and managing the intervention) Material Resources allocated (e.g. cost of venue, equipment, training material, etc.) 	<ul style="list-style-type: none"> # of SMEs or other micro-organisations having successfully completed their participation to the intervention 	<ul style="list-style-type: none"> # of SMEs or other micro-organisations increasing their capabilities in use of ICT in their business processes 	<ul style="list-style-type: none"> # of SMEs or other micro-organisations belonging to the reference context and not participating to the intervention providing evidence of improvement of ICT usage in their business processes 	<ul style="list-style-type: none"> # of SMEs or other micro-organisations having successfully participated to the intervention that have increased in productivity # SMEs or other micro-organisations having successfully participated to the intervention that have increased of competitiveness
	<ul style="list-style-type: none"> Intervention for increasing Internet use for job searching 	<ul style="list-style-type: none"> # of beneficiaries of the intervention Cost of the intervention (per activity: promotion, design, deployment, monitoring and evaluation) Human Resources allocated (hours spent for providing the intervention, hours spent for design and managing the intervention) Material Resources allocated (e.g. cost of venue, equipment, training material, etc.) 	<ul style="list-style-type: none"> # of participants having successfully completed their participation to the intervention 	<ul style="list-style-type: none"> % of increase of average number of social network used for job searching after the intervention % of job contacts from social networks after the intervention % of increase of job offers (ICT related and not ICT related) received after the intervention 	<ul style="list-style-type: none"> # of participants to the intervention that achieved an increase in their level of confidence of use of ICT beyond working activities (e.g. Internet surfing; access to eBanking; eCommerce;; eGovernment or other eServices) # of additional users informally trained by participants in ICT training courses (i.e. nudge effect - e.g. family members or members of the social group to whom they belong to) % of increase in Internet usage in the area of intervention 	<ul style="list-style-type: none"> # of beneficiaries of the intervention that have actually found a job (ICT related and not ICT related) # of beneficiaries of the intervention that have actually increased their wage and/or job position
	<ul style="list-style-type: none"> Awareness raising Intervention for promoting SMEs access and use of ICT networks 	<ul style="list-style-type: none"> # of beneficiaries of the intervention Cost of the intervention (per activity: promotion, design, deployment, monitoring and evaluation) Human Resources allocated (hours spent for providing the intervention, hours spent for design and managing the intervention) Material Resources allocated (e.g. cost of venue, equipment, training material, etc.) 	<ul style="list-style-type: none"> # of SMEs or other micro-organisations successfully assisted in the intervention promoting access to ICT networks 	<ul style="list-style-type: none"> # of SMEs or other micro-organisations increasing their degree of access to and having a regular use of ICT networks in their business processes 	<ul style="list-style-type: none"> # of SMEs and other micro-organisations of the reference context not participating to the awareness actions having evidence of improvement due to increased access and use of ICT networks thanks to the contacts with SMEs and micro organisations participating to the intervention 	<ul style="list-style-type: none"> % of increase in productivity of SMEs or other micro-organisations due to increased access and to the use of ICT networks % of increase in competitiveness of SMEs or other micro-organisations due to increased access and to the use of ICT networks

Typologies of Interventions		Input indicators	Output indicators	Direct Outcome Indicators	Indirect Outcome Indicators	Specific Impact indicators
Job Placement	<ul style="list-style-type: none"> ▪ Intervention combining ICT training and Job placement activity 	<ul style="list-style-type: none"> - # of beneficiaries of the intervention - Cost of the intervention (per activity: promotion, design, deployment, monitoring and evaluation) - Human Resources allocated (hours spent for providing the intervention, hours spent for design and managing the intervention) - Material Resources allocated (e.g. cost of venue, equipment, training material, etc.) 	<ul style="list-style-type: none"> - # of beneficiaries that have completed the intervention 	<ul style="list-style-type: none"> - # of beneficiaries of the interventions that achieved an increase in their level of confidence of use of ICT - # of beneficiaries of the interventions that have increased their capability to use ICT for applying for a job - % of job contacts after the intervention - % of increase of job offers after the intervention - # of beneficiaries of the interventions that have been successfully supported in finding at least one 'matching job' (ICT or not ICT related) during the intervention 	<ul style="list-style-type: none"> - # of beneficiaries that have proceeded in further training (ICT related and not ICT related) - # of relatives and members of the community of belonging of the participants to the intervention that have benefitted of their help in job searching 	<ul style="list-style-type: none"> - # of beneficiaries of the intervention that have actually found a job (ICT related and non ICT related) - # of beneficiaries of the intervention that have actually increased their wage and/or job position
	<ul style="list-style-type: none"> ▪ Intervention for increasing Internet use for job searching 	<ul style="list-style-type: none"> - # of beneficiaries of the intervention - Cost of the intervention (per activity: promotion, design, deployment, monitoring and evaluation) - Human Resources allocated (hours spent for providing the intervention, hours spent for design and managing the intervention) - Material Resources allocated (e.g. cost of venue, equipment, training material, etc.) 	<ul style="list-style-type: none"> - # of beneficiaries that have completed the intervention 	<ul style="list-style-type: none"> - # of beneficiaries of the interventions that achieved an increase in their level of confidence of use of ICT for job searching - % increase of average number of ICT related channels (e.g. social networks) used for job searching after the intervention - # of job applications (ICT related and non ICT related) made after the intervention 	<ul style="list-style-type: none"> - # of relatives and members of the community of belonging of the participants to the intervention that have benefitted of their help in job searching 	<ul style="list-style-type: none"> - # of beneficiaries of the intervention that have actually found a job (ICT related and non ICT related) - # of beneficiaries of the intervention that have actually increased their wage and/or job position
	<ul style="list-style-type: none"> ▪ Awareness raising Intervention for SMEs about the importance of ICT skills for competitiveness 	<ul style="list-style-type: none"> - # of beneficiaries of the intervention - Cost of the intervention (per activity: promotion, design, deployment, monitoring and evaluation) - Human Resources allocated (hours spent for providing the intervention, hours spent for design and managing the intervention) - Material Resources allocated (e.g. cost of venue, equipment, training material, etc.) 	<ul style="list-style-type: none"> - # of SMEs and other micro-organisations involved in interventions accepting to promote job placement (ICT related) after the awareness intervention 	<ul style="list-style-type: none"> - # of SMEs and other micro-organisations benefiting of the intervention to employ new ICT related professionals - # of new employees (ICT related) in SMEs or other micro organizations due to their participation to the awareness action 	<ul style="list-style-type: none"> - % of ICT skilled professionals increase in the reference context 	<ul style="list-style-type: none"> - # of SMEs and other micro-organisations participating to the awareness intervention and that have increased their productivity due to improved internal ICT capabilities - # of SMEs and other micro-organisations participating to the awareness intervention and that have increased their competitiveness due to improved internal ICT capabilities

A2.3. Evaluation criteria

According with the general approach to impact measurement and evaluation underpinning the MIREIA eI2-IAF (see Final Report), there are several criteria for measuring the degree of achievement of results of an intervention. Among them, the evaluation criteria that have been chosen to be used as part of the Impact Measurement Tool are: **efficiency, effectiveness and sustainability**.⁶

Within the context of the MIREIA eI2-IAF they are calculated, making reference to the System of Measurement Indicators described in the previous Section A2.2., as follows:

- **Efficiency** (OUTPUT/INPUT ratio in the system of measurement indicators), describes the extent to which time, effort or cost is used for the implementation of a given intervention. It is often used specifically to relay the capability of a particular application of effort to produce a concrete outcome effectively with minimum waste, expense, and unnecessary effort. The measurement of the efficiency of a given intervention can be produced immediately after its completion and as soon as output measures are made available.
- **Effectiveness** (OUTCOME /OUTPUT ratio in the system of measurement indicators), provides a measure of the outcomes produced by a given intervention in relation to the output generated by the intervention itself. Effectiveness can only be measured when outcomes are available. As discussed in the section on Measurement Indicators (see §A4.2.2), the measurement of the outcome of a given intervention has to be conducted a certain time after the end of the intervention. In the case studies, measurement of the outcomes was done three to six months after the intervention was finished with surveys involving a sample of beneficiaries who successfully completed the intervention.
- **Sustainability** (IMPACT/OUTPUT ratio in the system of measurement indicators), aims to define the capability of the intervention to produce structural changes in the beneficiaries' conditions. Again, measurement of an intervention's sustainability needs to be done after a certain time after the end of the intervention itself. The time lag between the intervention and the measurement of impact indicators needs to be longer than that of the measurement of outcome indicators. This is due to the fact that sustainability is evaluated according to impact indicators that provide evidence of structural changes (e.g. in the employment status of the beneficiaries of a specific intervention). For this reason, as already anticipated in §A4.2.2, the measurement of the impact is usually done at least one year after the completion of a given intervention. However the decision on when to conduct impact measurement and assess the sustainability of the intervention can vary according to the nature of the intervention itself and the availability of resources to conduct the evaluation.

A2.3.1 Purpose and content of the evaluation criteria

The purpose of using evaluation criteria is to allow to assess in an aggregated manner the measurement indicators presented in Section A2.2 above, in order to provide the intermediaries and eInclusion stakeholders with an instrument to better understand the capability of their interventions to address the four specific dimensions of impact on employability that are addressed by the MIREIA eI2-IAF (i.e. **Skilling, Empowerment, Networking and Job Placement**) at different levels: micro - single intervention; meso - aggregated set of interventions carried out by and intermediary; and macro - set of interventions related to a specific policy objective.

For this purpose, Table A6 presents the complete set of indicators reclassified according to the criteria of evaluation in order to assess the efficiency, effectiveness and sustainability of interventions (micro level), set of interventions/programme (meso level) or policy interventions (macro level).

⁶ The criteria selected are common criteria that are the most widely used in practice by eInclusion intermediaries as confirmed also by the fieldwork experience in testing the MIREIA eI2-IAF to the case studies.

A2.3.2 Who should use the tool

Depending on the level of analysis different actors can be involved. In all cases however, this is not just a technical issue, so despite the involvement of staff members of the intermediaries at operational level, with the support of external experts and/or researchers if required, the results of the analysis should be assessed also at the strategic/policy levels of the intermediaries and possibly discussed with representatives of various local stakeholders so to be taken into consideration during the phase of ex ante evaluation for programming new interventions or policies.

A2.3.3 How to use the tool

Analysis at micro level can be carried out easily by intermediaries responsible for the interventions using basic statistical analysis. However, to collect data of measurement indicators for meso and macro analysis it is necessary to establish a well-structured monitoring process allowing to collect data from all interventions that are normally implemented by a variety of actors operating in the field. Examples derived from the testing of the MIREIA eI2-IAF in the case studies are also provided in Table A8, where possible uses of the Impact Measurement Tool are presented, after having described the procedure of operationalisation of the tool in the next Section A2.4.

Table A6 - System of measurement indicators reclassified according to the criteria of evaluation to measure: Efficiency, Effectiveness and Sustainability

Dimension of specific Impact: Skilling	
Typologies of Intervention	Measurement indicators
	EFFICIENCY indicators
<ul style="list-style-type: none"> ▪ Basic Digital literacy training courses ('medium-related' skills including operational and formal Internet skills) 	<ul style="list-style-type: none"> · # of participants in ICT basic training course who completed the training/ initial # of participants ^{1,5} · # of participants in ICT basic training course who completed the training/ Cost of the intervention (per activity: promotion, design, deployment, monitoring and evaluation)^{1,5} · # of participants in ICT basic training course who completed the training/ Human Resources allocated (hours spent for teaching, tutoring, exercising, design and managing of the course)^{1,5} · # of participants in ICT basic training course who completed the training/ Material Resources allocated (e.g. cost of venue, equipment, training material, etc.)⁵
<ul style="list-style-type: none"> ▪ Advanced ICT skills development (both 'medium-related' and 'content-related' skills including information and strategic internet skills) 	<ul style="list-style-type: none"> · # of participants in ICT advanced training course who completed the training/ initial # of participants ^{1,5} · # of participants in ICT advanced training course who completed the training/ Cost of the intervention (per activity: promotion, design, deployment, monitoring and evaluation)^{1,5} · # of participants in ICT basic training course who completed the advanced ICT training/ Human Resources allocated (hours spent for teaching, tutoring, exercising, design and managing of the course)^{1,5} · # of participants in ICT advanced training course who completed the training/ Material Resources allocated (e.g. cost of venue, equipment, training material, etc.)⁵
<ul style="list-style-type: none"> ▪ Awareness raising interventions for promoting ICT career 	<ul style="list-style-type: none"> · # of participants having completed the awareness intervention / initial # of participants ^{1,5} · # of participants having completed the awareness intervention / Cost of the intervention (per activity: promotion, design, deployment, monitoring and evaluation)^{1,5} · # of participants having completed the awareness intervention / Human Resources allocated (hours spent for design, deployment and manage the awareness intervention)^{1,5}
<ul style="list-style-type: none"> ▪ ICT Skills certification (based on standards requested by the ICT sector) 	<ul style="list-style-type: none"> · # of participants of the ICT skills certification intervention that have completed the course / initial # of participants ⁴ · # of participants of the ICT skills certification intervention that have completed the course / Cost of the intervention (per activity: promotion, design, deployment, monitoring and evaluation)^{1,5} · # of participants of the ICT skills certification intervention that have completed the course / Human Resources allocated (hours spent for design, deployment and manage the ICT skills certification intervention)^{1,5} · # of participants of the ICT skills certification intervention that have completed the course / Material Resources allocated (e.g. cost of venue, equipment, training material, etc.)⁵
	EFFECTIVENESS indicators
<ul style="list-style-type: none"> ▪ Basic Digital literacy training courses ('medium-related' skills including operational and formal Internet skills) 	<ul style="list-style-type: none"> · # of users of basic ICT training course achieving evidence of skills progression/# of participants in ICT basic training course who completed the training^{1,5} · # of job offers (ICT related) received after the basic ICT training course/ # of participants in ICT basic training course who completed the training^{1,5} · # of participants to the course that achieved an increase in their level of confidence of use of ICT beyond working activities (e.g. Internet surfing; access to eBanking; eCommerce; eGovernment or other eServices) / # of participants in ICT basic training course who completed the training^{1,5} · # of participants progressing to advanced ICT courses / # of participants in ICT basic training course who completed the training^{1,5} · # of participants progressing to further education (ICT or non ICT related) / # of participants in ICT basic training course who completed the training^{1,5}
<ul style="list-style-type: none"> ▪ Advanced ICT skills development (both 'medium-related' and 	<ul style="list-style-type: none"> · # of users of advanced training ICT course achieving evidence of skills progression / # of participants in ICT advanced training course who completed the training

'content-related' skills including information and strategic internet skills)	# of job offers (ICT related) received after the advanced ICT training course/ # of participants in ICT advanced training course who completed the training % of increase in Internet usage in the area of intervention / # of participants in ICT advanced training course who completed the training # of participants to the intervention that achieved an increase in their level of confidence of use of ICT beyond working activities (e.g. Internet surfing; access to eBanking; eCommerce; eGovernment or other eServices) / # of participants in ICT advanced training course who completed the training # of participants progressing to further education (ICT or non ICT related) / # of participants in ICT advanced training course who completed the training
▪ Awareness raising interventions for promoting ICT career	# of participants that expressed interest in following an university degree leading to an ICT career/# of participants having completed the specific ICT skills awareness actions ⁵ # of subscription to university degrees leading to ICT careers done by the participants to the awareness action/ # of participants having completed the specific ICT skills awareness actions ⁵
▪ ICT Skills certification (based on standards requested by the ICT sector)	# of beneficiaries of interventions with certified increased ICT skills that are available on the job market/# of participants of the ICT skills certification interventions that have completed the courses ⁵
SUSTAINABILITY indicators	
▪ Basic Digital literacy training courses ('medium-related' skills including operational and formal Internet skills)	# of participants in ICT basic training courses that have actually found a job (ICT related)/# of participants in ICT basic training course who completed the training ^{1,5} # of participants in ICT basic training course that have actually increased their wage and/or job position/ # of participants in ICT basic training course who completed the training ^{1,5}
▪ Advanced ICT skills development (both 'medium-related' and 'content-related' skills including information and strategic internet skills)	# of participants in ICT advanced training course that have actually found a job (ICT related)/# of participants in ICT basic training course who completed the training ^{1,5} # of university degrees leading to ICT careers obtained by the participants to the awareness action / # of participants in ICT basic training course who completed the training ^{1,5}
▪ Awareness raising interventions for promoting ICT career	# of participants in ICT awareness action that have actually found a job (ICT related)/# of participants having completed the specific ICT skills awareness actions ⁵ # of subscription to university degrees leading to ICT careers done by the participants to the awareness action/# of participants having completed the specific ICT skills awareness actions ⁵
▪ ICT Skills certification (based on standards requested by the ICT sector)	# of participants in certification action that have actually found a job (ICT related)/# of participants of the ICT skills certification interventions that have completed the courses ⁵

Typologies of Intervention		Dimension of specific Impact: Empowerment
		Measurement indicators
		EFFICIENCY indicators
<ul style="list-style-type: none"> ▪ Intervention aimed at improving entrepreneurship and self-employment 	<ul style="list-style-type: none"> · # of projects having completed the intervention on entrepreneurship / self-employment/# of projects for ICT enabled entrepreneurship and self-employment started with the intervention⁵ · # of projects having completed the intervention on entrepreneurship/ Cost of the intervention (per activity: promotion, design, deployment, monitoring and evaluation)⁵ · # of projects having completed the intervention on entrepreneurship/ Human Resources allocated (hours spent for providing the intervention, hours spent for design and managing the intervention)⁵ · # of projects having completed the intervention on entrepreneurship/ Material Resources allocated (e.g. cost of venue, equipment, training material, etc.)⁵ 	
<ul style="list-style-type: none"> ▪ Intervention on promoting ICT-enabled social innovation 	<ul style="list-style-type: none"> · # of projects having developed an ICT-enabled social innovation activity at the end of the intervention / initial # of projects related to ICT-enabled social innovation started with the intervention⁵ · # of projects having developed an ICT-enabled social innovation activity at the end of the intervention/Cost of the intervention (per activity: promotion, design, deployment, monitoring and evaluation)⁵ · # of projects having developed an ICT-enabled social innovation activity at the end of the intervention / Human Resources allocated (hours spent for providing the intervention, hours spent for design and managing the intervention)⁵ · # of projects having developed an ICT-enabled social innovation activity at the end of the intervention /Material Resources allocated (e.g. cost of venue, equipment, training material, etc.)⁵ 	
<ul style="list-style-type: none"> ▪ Intervention aimed at promoting Internet use for job searching (e.g. training course) 	<ul style="list-style-type: none"> · # of participants having successfully completed their participation to the intervention/ initial # of participants^{1.5} · # of participants having successfully completed their participation to the intervention/ Cost of the intervention (per activity: promotion, design, deployment, monitoring and evaluation)^{1.5} · # of participants having successfully completed their participation to the intervention/ Human Resources allocated (hours spent for providing the intervention, hours spent for design and managing the intervention)^{1.5} · # of participants having successfully completed their participation to the intervention/ Material Resources allocated (e.g. cost of venue, equipment, training material, etc.)⁵ 	
<ul style="list-style-type: none"> ▪ Intervention aimed at promoting the use of Internet centres for job searching 	<ul style="list-style-type: none"> · # of participants that have become regular users of public and/or private Internet centres or using ICT facilities provided by intermediaries/initial # of participants⁵ · # of participants that have become regular users of public and/or private Internet centres or using ICT facilities provided by intermediaries / Cost of the intervention (per activity: promotion, design, deployment, monitoring and evaluation)⁵ · # of participants that have become regular users of public and/or private Internet centres or using ICT facilities provided by intermediaries / Human Resources allocated (hours spent for providing the intervention, hours spent for design and managing the intervention)⁵ · # of participants that have become regular users of public and/or private Internet centres or using ICT facilities provided by intermediaries / Material Resources allocated (e.g. cost of venue, equipment, training material, etc.)⁵ 	
<ul style="list-style-type: none"> ▪ Intervention aimed at increasing competitiveness of SMEs and micro organisations through ICT use 	<ul style="list-style-type: none"> · # of SMEs or other micro-organisations having successfully completed their participation to the intervention/initial # of SMEs or other micro-organisations participating to the intervention⁵ · # of SMEs or other micro-organisations having successfully completed their participation to the intervention / Cost of the intervention (per activity: promotion, design, deployment, monitoring and evaluation)⁵ · # of SMEs or other micro-organisations having successfully completed their participation to the intervention/ Human Resources allocated (hours spent for providing the intervention, hours spent for design and managing the intervention)⁵ · # of SMEs or other micro-organisations having successfully completed their participation to the intervention/ Material Resources allocated (e.g. cost of venue, equipment, training material, etc.)⁵ 	

	EFFECTIVENESS indicators
▪ Intervention aimed at improving entrepreneurship and self-employment	· # of beneficiaries assisted on entrepreneurship and self-employment that proceeded further in their business creation activity (i.e. active one year after intervention) / # of projects having completed the intervention on entrepreneurship and self-employment ⁵ · # of projects for ICT-related/enabled entrepreneurship / self-employment started after the intervention / # of projects having completed the intervention on entrepreneurship and self-employment ⁵
▪ Intervention on promoting ICT-enabled social innovation	· # of beneficiaries assisted on ICT-enabled social innovation activities that proceeded further in their activity (i.e. active one year after intervention) / # of projects having developed an ICT-enabled social innovation activity at the end of the intervention ⁵ · # of projects for ICT-enabled social innovation started after the intervention / # of projects having developed an ICT-enabled social innovation activity at the end of the intervention ⁵
▪ Intervention aimed at promoting Internet use for job searching (e.g. training course)	· # of participants achieving an increase in their level of confidence of use of ICT for job searching/# of participants having successfully completed their participation to the intervention ⁵
▪ Intervention aimed at promoting the use of Internet centres for job searching	· # of regular users to public and-or private Internet centres facilities or intermediaries that access ICTs for job searching that have increase in access to job related information and increase in ICT related job search capabilities/# of participants that have become regular users of public and-or private Internet centres or using ICT facilities provided by intermediaries ⁵ · % of increase of job offers (ICT related and not ICT related) received after accessing public and/or private Internet centres facilities of the intermediaries/# of participants that have become regular users of public and/or private Internet centres or using ICT facilities provided by intermediaries ⁵
Intervention aimed at increasing competitiveness of SMEs and micro organisations through ICT use	· # of SMEs or other micro-organisations increasing their capabilities in use of ICT in their business processes/# of SMEs or other micro-organisations having successfully completed their participation to the intervention ⁵
	SUSTAINABILITY indicators
▪ Intervention aimed at improving entrepreneurship and self-employment	· # of ICT related enterprises and business activities derived from projects having completed the intervention /# of projects having completed the intervention on entrepreneurship and self-employment ⁵
▪ Intervention on promoting ICT-enabled social innovation	· # of projects developed by the intervention that have done financial investment devoted to ICT related social innovation/# of projects having developed an ICT-enabled social innovation activity at the end of the intervention ⁵ · # of participants to the social innovation project developed by the intervention that have actually increased their income/improved their Job conditions /# of projects having developed an ICT-enabled social innovation activity at the end of the intervention ⁵

<p>▪ Intervention aimed at promoting Internet use for job searching (e.g. training course)</p>	<ul style="list-style-type: none"> · # of participants to the intervention/training course that have actually found a job (ICT related and not ICT related)/# of participants having successfully completed their participation to the intervention⁵ · #of participants in the intervention/training course that have actually increased their wage and-or job position/)# of participants having successfully completed their participation to the intervention⁵
<p>▪ Intervention aimed at promoting the use of Internet centres for job searching</p>	<ul style="list-style-type: none"> · # of participants to the intervention who became regular users of public or private Internet centers of the intermediaries that have actually found a job (ICT related and not ICT related)/# of participants that have become regular users of public and/or private Internet centres or using ICT facilities provided by intermediaries⁵ · # of participants to the intervention who became regular users of public or private Internet centres of the intermediaries that have actually increased their wage and/or job position /# of participants that have become regular users of public and-or private Internet centres or using ICT facilities provided by intermediaries⁵
<p>Intervention aimed at increasing competitiveness of SMEs and micro organisations through ICT use</p>	<ul style="list-style-type: none"> · # of SMEs or other micro-organisations having successfully participated to the intervention that have increased in productivity/# of SMEs or other micro-organisations having successfully completed their participation to the intervention⁵ · # SMEs or other micro-organisations having successfully participated to the intervention that have increased of competitiveness/# of SMEs or other micro-organisations having successfully completed their participation to the intervention⁵

<p style="text-align: center;">Dimension of specific Impact: Networking</p> <p>Typologies of Intervention Measurement indicators</p>	
<p>▪ Intervention for increasing Internet use for job searching</p>	<p>EFFICIENCY indicators</p> <ul style="list-style-type: none"> · # of participants having successfully completed their participation to the intervention/ # of beneficiaries of the intervention · # of participants having successfully completed their participation to the intervention/ Cost of the intervention (per activity: promotion, design, deployment, monitoring and evaluation)⁵ · # of participants having successfully completed their participation to the intervention/ Human Resources allocated (hours spent for providing the intervention, hours spent for design and managing the intervention)⁵ · # of participants having successfully completed their participation to the intervention/ Material Resources allocated (e.g. cost of venue, equipment, training material, etc.)⁵
<p>▪ Awareness raising Intervention for promoting SMEs access and use of ICT networks</p>	<ul style="list-style-type: none"> · # of SMEs or other micro-organisations having successfully completed their participation to the intervention/# of beneficiaries of the intervention · # of SMEs or other micro-organisations having successfully completed their participation to the intervention / Cost of the intervention (per activity: promotion, design, deployment, monitoring and evaluation)⁵ · # of SMEs or other micro-organisations having successfully completed their participation to the intervention/ Human Resources allocated (hours spent for providing the intervention, hours spent for design and managing the intervention)⁵ · # of SMEs or other micro-organisations having successfully completed their participation to the intervention/ Material Resources allocated (e.g. cost of venue, equipment, training material, etc.)⁵
<p>▪ Intervention for increasing Internet use for job searching</p>	<p>EFFECTIVENESS indicators</p> <ul style="list-style-type: none"> · # of participants to the intervention that achieved an increase in their level of confidence of use of ICT beyond working activities (e.g. Internet surfing, access to eBanking, eCommerce,; eGovernment or other eServices)/ # of participants having successfully completed their participation to the intervention^{2,3,4} · # of additional users informally trained by participants in ICT training courses (i.e. nudge effect - e.g. family members or members of the social group to whom they

	<ul style="list-style-type: none"> belong to)/ # of participants having successfully completed their participation to the intervention^{2,3,4} % of increase in Internet usage in the area of intervention/# of participants having successfully completed their participation to the intervention^{2,3,4}
<ul style="list-style-type: none"> ▪ Awareness raising Intervention for promoting SMEs access and use of ICT networks 	<ul style="list-style-type: none"> # of SMEs and other micro-organisations of the reference context not participating to the awareness actions having evidence of improvement due to increased access and use of ICT networks thanks to the contacts with SMEs and micro organisations participating to the intervention/# of SMEs or other micro-organisations successfully assisted in the intervention promoting access to ICT networks⁵
	SUSTAINABILITY indicators
<ul style="list-style-type: none"> ▪ Intervention for increasing Internet use for job searching 	<ul style="list-style-type: none"> # of beneficiaries of the intervention that have actually found a job (ICT related and not ICT related)/ # of participants having successfully completed their participation to the intervention^{2,3,4} # of beneficiaries of the intervention that have actually increased their wage and-or job position/# of participants having successfully completed their participation to the intervention^{2,3,4}
<ul style="list-style-type: none"> ▪ Awareness raising Intervention for promoting SMEs access and use of ICT networks 	<ul style="list-style-type: none"> % of increase in productivity of SMEs or other micro-organisations due to increased access and to the use of ICT networks/# of SMEs or other micro-organisations successfully assisted in the intervention promoting access to ICT networks⁵ % of increase in competitiveness of SMEs or other micro-organisations due to increased access and to the use of ICT networks/# of SMEs or other micro-organisations successfully assisted in the intervention promoting access to ICT networks⁵

Dimension of specific Impact: Job placement	
Typologies of Intervention	Measurement indicators
	EFFICIENCY indicators
<ul style="list-style-type: none"> ▪ Intervention combining ICT training and Job placement activity 	<ul style="list-style-type: none"> # of beneficiaries that have completed the intervention / # of beneficiaries of the intervention # of beneficiaries that have completed the intervention / Cost of the intervention (per activity: promotion, design, deployment, monitoring and evaluation)⁵ # of beneficiaries that have completed the intervention / Human Resources allocated (hours spent for providing the intervention, hours spent for design and managing the intervention)⁵ # of beneficiaries that have completed the intervention / Material Resources allocated (e.g. cost of venue, equipment, training material, etc.)⁵
<ul style="list-style-type: none"> ▪ Intervention for increasing Internet use for job searching 	<ul style="list-style-type: none"> # of beneficiaries that have completed the intervention /# of beneficiaries of the intervention # # of beneficiaries that have completed the intervention / Cost of the intervention (per activity: promotion, design, deployment, monitoring and evaluation)⁵ # of beneficiaries that have completed the intervention / Human Resources allocated (hours spent for providing the intervention, hours spent for design and managing the intervention)⁵ # of beneficiaries that have completed the intervention / Material Resources allocated (e.g. cost of venue, equipment, training material, etc.)⁵
<ul style="list-style-type: none"> ▪ Awareness raising Intervention for SMEs about the importance of ICT skills for competitiveness 	<ul style="list-style-type: none"> # of SMEs or other micro-organisations having successfully completed their participation to the intervention / # of beneficiaries of the intervention # of SMEs or other micro-organisations having successfully completed their participation to the intervention / Cost of the intervention (per activity: promotion, design, deployment, monitoring and evaluation)⁵ # of SMEs or other micro-organisations having successfully completed their participation to the intervention/ Human Resources allocated (hours spent for providing the intervention, hours spent for design and managing the intervention)⁵ # of SMEs or other micro-organisations having successfully completed their participation to the intervention/ Material Resources allocated (e.g. cost of venue, equipment, training material, etc.)⁵

	EFFECTIVENESS indicators
<ul style="list-style-type: none"> ▪ Intervention combining ICT training and Job placement activity 	<ul style="list-style-type: none"> · # of beneficiaries of the interventions that achieved an increase in their level of confidence of use of ICT/# of beneficiaries that have completed the intervention⁵ · # of beneficiaries of the interventions that have increased their capability to use ICT for applying for a job/# of beneficiaries that have completed the intervention⁵ · % of job contacts after the intervention/# of beneficiaries that have completed the intervention⁵ · % of increase of job offers after the intervention/# of beneficiaries that have completed the intervention⁵ · # of beneficiaries of the interventions that have been successfully supported in finding at least one 'matching job' (ICT or not ICT related) during the intervention/# of beneficiaries that have completed the intervention⁵
<ul style="list-style-type: none"> ▪ Intervention for increasing Internet use for job searching 	<ul style="list-style-type: none"> · # of beneficiaries of the interventions that achieved an increase in their level of confidence of use of ICT for job searching/# of beneficiaries that have completed the intervention⁵ · % increase of average number of ICT related channels (e.g. social networks) used for job searching after the intervention/# of beneficiaries that have completed the intervention⁵ · # of job applications (ICT related and non ICT related) made after the intervention/# of beneficiaries that have completed the intervention⁵
<ul style="list-style-type: none"> ▪ Awareness raising Intervention for SMEs about the importance of ICT skills for competitiveness 	<ul style="list-style-type: none"> · # of SMEs and other micro-organisations benefiting of the intervention to employ new ICT related professionals/# of SMEs and other micro-organisations involved in interventions accepting to promote job placement (ICT related) after the awareness intervention⁵ · # of new employees (ICT related) in SMEs or other micro organizations due to their participation to the awareness action/# of SMEs and other micro-organisations involved in interventions accepting to promote job placement (ICT related) after the awareness intervention⁵
	SUSTAINABILITY indicators
<ul style="list-style-type: none"> ▪ Intervention combining ICT training and Job placement activity 	<ul style="list-style-type: none"> · # of beneficiaries of the intervention that have actually found a job (ICT related and non ICT related) /# of beneficiaries that have completed the intervention⁵ · # of beneficiaries of the intervention that have actually increased their wage and-or job position/# of beneficiaries that have completed the intervention⁵
<ul style="list-style-type: none"> ▪ Intervention for increasing Internet use for job searching 	<ul style="list-style-type: none"> · # of beneficiaries of the intervention that have actually found a job (ICT related and non ICT related) /# of beneficiaries that have completed the intervention⁴ · # of beneficiaries of the intervention that have actually increased their wage and/or job position/# of beneficiaries that have completed the intervention⁵
<ul style="list-style-type: none"> ▪ Awareness raising Intervention for SMEs about the importance of ICT skills for competitiveness 	<ul style="list-style-type: none"> · # of SMEs and other micro-organisations participating to the awareness intervention and that have increased their productivity due to improved internal ICT capabilities/# of SMEs and other micro-organisations involved in interventions accepting to promote job placement (ICT related) after the awareness intervention⁵ · # of SMEs and other micro-organisations participating to the awareness intervention and that have increased their competitiveness due to improved internal ICT capabilities/# of SMEs and other micro-organisations involved in interventions accepting to promote job placement (ICT related) after the awareness intervention⁵

Sources: ¹ Codagnone, 2009, ² Garrido et al, 2012, ³ Helsper, 2012, ⁴ ICT4ALL, 2008, ⁵ Authors' elaboration from MIREIA projects and related case studies

A2.4. Operationalisation of the Impact Measurement Tool

Having described the various components of the Impact Measurement Tool: 1. Context Analysis Checklist; 2. System of Measurement Indicators; and 3 Evaluation Criteria to measure Efficiency, Effectiveness and Sustainability of interventions/set of interventions/policies (i.e. micro-meso-macro level), in this section we present the procedure for the operationalisation of the Impact Measurement tool derived from the experience gained through testing it with the four case studies as part of the MIREIA research.

In particular Table A7 describes the main steps of the procedure, the profile of people that should be involved for its correct implementation and, for each step the key activities to be undertaken.

Moreover, indications on which phase of evaluation (ex-ante; in-itinere or ex-post) is supported by each step is provided. The last column of the Table makes reference to the operational components available as part of the MIREIA eI2-IAF Toolkit and tested in the case studies.

At the end of this section we present some example of how the Impact Measurement Tool can be used in practice taking as examples the cases studied as part of the testing of the MIREIA eI2-IAF (Table A8).

Table A7 – Operationalisation of the Impact Measurement Tool

	WHAT	WHO	HOW	WHEN	MIREIA eI2-IAF Toolkit
Step 1	Stakeholders' engagement	Staff of the intermediary at policy/strategic/operational level and representatives of relevant stakeholders in the area of reference of the intervention	Mapping of the stakeholders according to their stake and interest to collaborate as well as the role/availability in providing funds and/or resources. Involvement of the stakeholders in the decision process of the intermediary through dedicated communication channels and periodical meetings/workshops/focus groups or interviews.	Steps 1, 2 and 3 are crucial for ex-ante evaluation to support conducting the situational analysis (e.g. SWOT Analysis) (see Step 3) as well as the estimation of expected outputs/outcomes/impacts to be achieved by the intervention (see Step 5). However these activities should be conducted periodically during the execution of the intervention to support the in-itinere evaluation and at the end of the intervention as part of the ex-post evaluation, in order to support assessment of progresses and impacts achieved by the intervention	Context Analysis Checklist
Step 2	Appraisal of mission, strategy and objectives of the intermediary		Structured discussion (e.g. workshops/focus groups) between staff members of the intermediary and engaged stakeholders based upon the nature of the organisation of the intermediary		
Step 3	Context analysis	Staff of the intermediary at policy/strategic/operational level, and, if required, with the support of external experts and/or local researchers, as well as involving experts and representatives of relevant stakeholders for integrating external perspectives and suggestions	Collection of quantitative data based on primary and secondary sources on the socio-economic context of reference for the intermediary complemented by qualitative situational analysis		
Step 4	Appraisal of the strategic and operational objectives of the intervention/s to be implemented / monitored / assessed		Analysis and selection of the intervention/s on the basis of: context analysis trends; relevance in comparison with other interventions of the intermediary; external factors and policy goals at intermediary and context level.	Steps 4, and 5 are crucial for ex-ante evaluation to support designing the strategy and operational intervention/s to be implemented / monitored / assessed and associate relevant indicators for monitoring and evaluation as well as estimate expected target value for each indicator in relation to the objectives of the intervention/s. However these activities should be conducted periodically during the execution of the intervention to support the in-itinere evaluation and at the end of the intervention as part of the ex-post evaluation, in order to support assessment of progresses and impacts achieved by the intervention	System of Measurement Indicators Evaluation Criteria
Step 5	Selection and quantification of the Input, Output, Outcome, Impact indicators	Staff of the intermediary at policy/strategic/operational level, and, if required, with the support of external experts and/or local researchers	The selection of indicators can be done combining: <ul style="list-style-type: none"> ▪ The selection of suitable indicators from the MIREIA-eI2-IAF system of measurement indicators. ▪ The definition of more specific additional indicators more representative of the characteristics of the intervention/s to be implemented / monitored / assessed 		
Step 6	Definition of a data gathering strategy (monitoring) and methodology for (impact) evaluation		Define practical steps and procedures for monitoring and evaluation (i.e. data gathering and evaluation methodologies to be used). This depends on availability of data, resources and expertise (internal/external) to conduct the monitoring and evaluation. This step can be related to the Guidelines for Impact Evaluation in case it is decided to apply impact evaluation based on counterfactual (or simplified) methodologies. In this case it is required to interview (sample) of beneficiaries and control groups according to the specific methodology chosen (see section 3 of this Annex).	Step 6 and 7 should be defined during the ex-ante evaluation and updated if needed during the execution of the intervention/s to support in-itinere and ex-post evaluations.	Question Bank Optional: Guidelines for Impact Evaluation (see section 3 of this Annex)

WHAT	WHO	HOW	WHEN	MIREIA eI2-IAF Toolkit
Step 7	Development of questionnaires for data gathering of selected indicators (including, if required a specific set of questionnaires for impact evaluation – i.e. control groups)	Staff of the intermediary at operational level, and, if required, with the support of external experts and/or local researchers	Questionnaires should be able to capture relevant indicators defined according to the system of measurement indicators or additional more appropriate indicators identified. The Questionnaires available in the Question Bank developed for the case studies for testing the MIREIA eI2-IAF can be used as reference but should be adapted to the intervention/s that are under observation and the indicators that have been decided to measure in Step 5	
Step 8	Data gathering based on the strategy defined and indicators selected	Input and output data: Staff of the intermediary at operational level Outcome and Impact data: Staff of the intermediary at operational and strategic level, and, if required, with the support of external experts and/or local researchers	Various techniques for data gathering can be applied: <ul style="list-style-type: none"> ▪ Input data are mainly related to list of beneficiaries of the intervention/s and (human, material, financial, technological, etc.) resources allocated. They are usually available to the organisation managing the intervention/s. ▪ Output data are mainly related to the immediate results of the intervention/s (e.g. participants that completed a training course, etc.). They are usually collected by the intermediary and used for justifying the funds received by funding bodies / donors. They are usually available to the organisation managing the intervention/s. ▪ Outcome data are mainly related to information of beneficiaries gathered in the short/mid-term after the end of the intervention (e.g. six months to one year). They are usually collected in a systematic way administering questionnaires to beneficiaries of the intervention/s (e.g. on-line questionnaires, emails, CATI, direct phone calls or papers). Medium-large intermediaries are normally used to collect this kind of data, while micro-small intermediaries are not often gathering such data. ▪ Impact data are mainly related to information of beneficiaries gathered in the mid-long term after the end of the intervention (usually more than one year). They are usually collected through ad hoc surveys on a sample of beneficiaries (through e.g. on-line questionnaires or CATI). This information is usually collected by large intermediaries (e.g. public administrations or networks of intermediaries) however medium/small intermediaries can also plan this kind of activity to single interventions (i.e. at micro level). 	Step 8 and 9 are conducted during the execution of the intervention/s to support in-itinere and ex-post evaluations. However, once data are available the results of these activities are highly beneficial during ex-ante evaluation to define or update benchmarks for constructing the baselines and estimate target objectives/indicators for the next programming period
Step 9	Analysis of the data gathered and quantification/estimation of measurement indicators	Staff of the intermediary at operational level and, if required, with the support of external experts and/or local researchers	Typical activities include: <ul style="list-style-type: none"> ▪ Data cleaning to remove possible inconsistencies in the answers collected in the previous steps; ▪ Statistical elaborations to associate raw data collected to the system of measurement indicators identified in Step 5 and quantify/estimate the indicators on input, output, outcome and impact. 	

WHAT	WHO	HOW	WHEN	MIREIA eI2-IAF Toolkit
Step 10	Measurement of the degree of efficiency, effectiveness and sustainability of the intervention/s in order to assess the degree of achievement of the specific dimensions of impact on employability associated to the system of measurement indicators	<p>Aggregated measurement of indicators gathered and calculation of the ratios according to the evaluation criteria as follows:</p> <ul style="list-style-type: none"> ▪ Efficiency: calculating the OUTPUT/INPUT ratio from the measurement indicators. ▪ Effectiveness: calculating the OUTCOME/OUTPUT ratio from the measurement indicators. ▪ SUSTAINABILITY: calculating the IMPACT/OUTPUT ratio from the measurement indicators. <p>The resulting values allow to create synthetic indexes that can be further aggregated in order to obtain an index that provides with a value of the degree of impact achieved by the intervention/s with regard to each dimension of specific impact and employability in general</p>	Step 10 is normally conducted at the end of the intervention/s to support ex-post evaluation. If data are gathered in a structured manner since the beginning of the intervention it can also be used to support in-itinere evaluation and, once data are made available the results of this measurement can be used for ex-ante evaluation to define or update benchmarks for constructing the baselines and estimate target objectives/indicators for the next programming period	<p>System of Measurement Indicators</p> <p>Evaluation Criteria</p>

To sum up, as mentioned above, the criteria of evaluation presented in §A2.3 are useful to measure the degree of efficiency, effectiveness and sustainability of interventions that are employability relevant. The resulting values allow creating synthetic indexes that can be further aggregated in order to obtain an index that provides with a value of the degree of impact achieved by the intervention/s with regard to each dimension of specific impact and employability in general. This can be done by aggregating the measurement indicators collected with the System of Measurement Indicators presented in §A2.2 (Table A5) and reclassify them as indicated in Table A6 and following the procedure described in Table A7.

To make it more practical, in Table A8 we describe the possible uses of the Impact Measurement Tool at different levels of analysis (micro-meso-macro), according to the typology of intermediaries involved in the impact measurement, based on the experience of the case studies.

Table A8 – Possible use of the Impact Measurement Tool

Typology of users	Level of Analysis		
	Micro level (impact measurement of a single intervention)	Meso level (impact measurement of an aggregate set of interventions)	Macro level (impact measurement of a whole set of interventions related to a specific policy objective)
Public authority in charge of an eInclusion Policy Intervention (e.g. Emilia Romagna region in Italy)			Local, Regional, National public administrations having in place a monitoring process for the measurement of OUTPUT-OUTCOME - IMPACT of eInclusion interventions funded under specific policy objectives
Structured network of intermediaries (e.g. Guadalinfo network of Telecenters in Spain)		Network of Intermediary, Private donors or Foundations having in place a monitoring process for the measurement of OUTPUT-OUTCOME-IMPACT of eInclusion interventions funded during a given period of time	
Single Intermediary (e.g. FIT in Ireland and FSRI in Poland)	All kind of intermediaries can use the Tool to produce EFFICIENCY measures of their interventions; Medium-large size Intermediaries with enough resources to conduct surveys on OUTCOME indicators and produce EFFECTIVENESS measures of their interventions	Medium-large size Intermediaries with enough resources to conduct surveys on IMPACT indicators and produce SUSTAINABILITY measures of their interventions	

In particular the **micro-level** of analysis, focused on a single intervention, can be monitored by any intermediary in charge of an intervention, while the measurement of **meso-level** impacts are possible and more important for network of intermediaries and stakeholders (e.g. donors or foundations) that are responsible for aggregating the results for set of interventions. They usually have also enough resources (for conducting systematic collection of data for outcome indicators as well as ad hoc surveys of impacts, so to carry out measurement of efficiency, effectiveness and sustainability. Moreover, according to the experience derived from the case studies, medium-large intermediaries also can conduct analysis at the meso level (see for example the FIT case study).

Finally **macro-level** of analysis that is related to the measurement of the impact of the whole set of interventions related to a specific policy objective are usually conducted by local/regional/national governments in charge of eInclusion policy implementation.

To provide some insight on the practical application of the Impact Measurement Tool in Table A9 below we present briefly the experiences of the intermediaries that took place in the testing of the MIREIA eI2-IAF. As they represent a variety of possible applications of the Impact Measurement Tool at different level (micro-meso-macro) these practical examples serve also to inspire other intermediaries to use the MIREIA eI2-IAF Toolkit in practice.

Table A9 – Examples of practical applications from the case studies

The Emilia-Romagna Region (Italy) represents a **typical user of the tool for macro analysis**. Being a regional authority in charge of the implementation of eInclusion policy its interest is to monitor the achievements of the policy implementation and to use this information for better designing future policy interventions. To this end, a monitoring process aimed at gathering information from the intermediaries to assess results of interventions was established in a structured manner. The monitoring process is organised in a way that the *Outputs* data related to each intervention is provided by the intermediaries, while the *Outcomes* and *Impacts* data are collected by the Region itself through direct contact with the participants to the interventions. These direct contacts are conducted on a periodical basis through direct phone calls, CATI or online questionnaires. The case study shows that the proposed the MIREIA eI2-IAF is coherent with and could support further the monitoring and evaluation processes implemented by regional and local public authorities in charge of eInclusion policies.

Consortium Fernando de los Rios (Spain) represents instead a peculiar case since its activities are funded by the Andalusia Region and it is in charge of a large network of eInclusion intermediaries (Guadalinfo network) aimed at providing eInclusion services in the whole regional territory. Therefore it represents a **typical user of the tool for meso analysis** because the Consortium is placed in between the regional government that plans the strategy to implement eInclusion policy and the local intermediaries, represented by the members of the Guadalinfo network, which are in charge of the local implementation of the interventions and are composed of a variety of actors, including municipalities, telecentres, local NGOs, Small, Medium and Micro enterprises, etc. The Consortium had already implemented a monitoring system for gathering information on the *outputs* produced by all eInclusion interventions managed. However these information were mainly collected to show to the regional government the compliancy with the strategy to implement the policy interventions. With the experiment conducted as part of the testing of the MIREIA eI2-IAF a mechanism for gathering evidence of the impacts generated has been put in place and which allowed also to redefine the future strategy of the programme of interventions under evaluation, INN&CIA.

Fast Track to IT FIT (Ireland) represents a typical case of an intermediary rooted on the territory that has already developed monitoring systems to provide to the funders and the local and national communities evidence on the results achieved by its interventions. Therefore it is not surprising that, even before the experimentation conducted to test the MIREIA-eI2-IAF, FIT was already organized to collect on a regular basis not only *outputs* information on the training courses, but also *outcomes* and to a certain extent *impacts* through ad hoc surveys. However also in the case of FIT it was evident the need of a more robust tool for measuring impact in a more rigorous manner and support conducting **micro level analysis** of the overall achievement of the interventions conducted in a defined period of time (e.g. one year). According to the experience conducted in the case of Ireland, the Measurement Tool proposed as part of the MIREIA eI2-IAF Toolkit could be beneficial for providing in a compact fashion relevant aggregated impacts of the interventions to the management team of the Intermediary, the funders and the community at large.

FRSI (Poland) represents a particular example of intermediary acting on the field having a stable funding support scheme provided by the Polish-American Freedom Foundation. In this case the interest of FRSI is to show to its donor that the planned activity is well performed and the intervention has achieved a large number of the target group members. As a matter of fact, however, the impact measurement activity of FRSI was initially limited to *outputs* measurement of the implemented interventions. Whereas, following the testing activities of the MIREIA eI2-IAF it was widely recognised that the Impact Measurement Tool could play an important role in promoting cultural changes in the behaviour of the FRSI management team turning their monitoring activity toward a more impact oriented one, paying more attention to combining *outputs* data collection with outcomes for **micro level analysis** able to provide evidence of effective impacts of the interventions.

A3 Methodological guidelines for impact evaluation

The aim and importance of Impact Evaluation has been anticipated in the Final Report (see §A1.2 and §A4.3), with specific regard to counterfactual impact evaluation. Its goal is to support intermediaries in evaluating causality relationships between their interventions and related outcomes, so to demonstrate impacts of these interventions.

As emerged from the testing of the MIREIA eI2 IAF on the case studies this is an important component of the Impact Assessment Framework since the evidence that intermediaries' intervention have concrete and stable effects on the employability conditions of beneficiaries of interventions can allow them to better design future interventions and, at the same time, help the private and public organizations financing the intermediaries, and the intermediaries themselves, to have concrete feedback on how well they are investing their resources. However differently from the other components of the MIREIA eI2 IAF this element is quite complex in its operationalisation and it usually requires the support of expert evaluators.

This is due because the evaluation of what would have happened in the absence of the intervention is a complex task. In fact, this is a value that, by definition, cannot be observed for people not involved in the project. In other words, it is not possible to know what would have been the behaviour (and circumstances) of a '*treated*' person in the absence of treatment. Similarly, there are no counterfactuals readily available for the '*non-treated*' (those not involved in the intervention).

In basic and simple terms counterfactual approach to evaluation (experimental and quasi-experimental) are ways to identify the causal effect of a treatment. To this end we need both the factual and the counterfactual outcome: the classic what happens to Mr Smith after he takes the aspirin and what would have happened to him had he not taken the aspirin. Once a treatment is given, we cannot longer observe the counterfactual outcomes and we need to find ways to recover this unobserved variable.

Without the possibility to observe the counterfactual for the treated, the only possibility is to treat a group of individuals and do not treat another group and then observe the difference in outcomes. But even in this case there could be a selection bias. For instance, if the treatment is a digital skills training course, and individuals are simply invited to join, it is possible that those who join are the more motivated and more able who would have found a job even without the treatment. Hence, the comparison between those who joined and those who did not would yield a spurious and biased estimate of the treatment effect.

To this end a variety of methodologies for impact evaluation exist. They can be distinguished in methods based on **experimental design with randomisation (Randomised Controlled Trials)** and, as alternative to randomisation, **quasi-experimental** (also known as observational such as: Matching and Propensity score Matching; Difference in Difference; Regression Discontinuity Design; Instrumental variables and natural experiments) methods.

What is common to all these 'approaches is that they attempt to identify or create the most appropriate control group⁷ in order to overcome the two main obstacles in the estimation of the counterfactual, which are:

- The 'selection bias', which consists of the fact that target population differs from counterfactual population due to pre-intervention features. A solution is the introduction of an identification hypothesis stating that pre-intervention variables are sufficient to 'reconstruct' the control group of non-beneficiaries (counterfactual).
- The presence of spontaneous dynamics, due to the fact that the target population differs from the control population for the trend of the result variable. A solution is the introduction of an identification hypothesis to take into consideration the spontaneous dynamics of the result variable trend.

⁷ For an introduction to policy evaluation see Khandker, Koolwal and Samad (2010).

There are essentially five main counterfactual impact assessment methodologies:

- Randomised controlled trials,
- Matching and Propensity score Matching,
- Difference-in-Difference,
- Regression Discontinuity Design,
- Instrumental variables and natural experiments.

In the following we provide a detailed description of the various Impact Evaluation methodologies with a particular emphasis on the two used in testing the MIREIA eI2-IAF: the Randomised Controlled Trial (see §A3.1) that have been tested in the case of the Italian Case study, and the Matching technique (see §A3.2), that was tested in the Spanish case. The latest three methodologies listed above are presented all together in §A3.3, while in §A3.4 we provide the main requirements for their operationalization.⁸

A3.1. Randomised Controlled Trials

Randomised experiments deliver a measure of the true impact of the intermediary's intervention and guarantee 'internal validity'. The difference in mean outcome between the treated group (TG) and the non-treated group (nTG) (i.e. comparison or control group) is a consistent estimator of the causal effect. Randomised experiments are experiments with social policies in which assignment to 'treatments' is based on the results of a random assignment, or lottery. In this respect the impact of the treatment would be given by the difference between the lottery winners' placement rate and the lottery losers' placement rate. In this situation we do not expect structural differences between those who are treated (and receive support) and those who are not, so that we can use the non-supported subjects as a control group for comparison with the former group. Randomisation ensures that the treatment group and the comparison group are comparable in every respect (age, proportion of men/women, qualifications, motivation, experience, cognitive abilities, etc.). Indeed, when a population is randomly allocated into two groups, the two groups will have extremely similar characteristics, provided the population is sufficiently large. The only difference between those two groups is that one takes part in the program and other does not. As an example, if we observe that the placement rate is higher in the treatment group than in the comparison group after 6 months, this means that intensive counselling is effective. Because randomisation ensures that the two groups are comparable in every respect, the placement rate in the comparison group is representative of the placement rate that we would have observed in the treatment group if it had remained untreated. Therefore, randomised experimentations allow us to measure the true impact of the policy intervention.

A3.2. Operationalisation of Randomised Controlled Trial methodology

In this section we describe the operationalisation of the Randomized Controlled Trials (RCT) methodology, discussing the procedure of counterfactual impact evaluation to be adopted.⁹

As shown in Table A9, the **first step** is the identification of the intervention which the intermediary intends to evaluate. In the case of the RCT, where the intervention is not already implemented, the logic underpinning the selection of the case to be evaluated, mainly depends on the possibility of

⁸ The description of the methodologies presented in this Section is drawn in part from EVALSED, an online resource developed by the European Commission, Directorate General Regional and Urban Policy. It provides an introduction to several evaluation techniques and guidance on the evaluation of socio-economic development, well as a library of evaluations carried out in the framework of the EU regional policy. For more information see: http://ec.europa.eu/regional_policy/sources/docgener/evaluation/evalsed/guide/index_en.htm

⁹ To be noticed that here it is described the operationalisation of the randomized controlled trial performed within the scope of the testing of the MIREIA eI2-IAF and adapted to Pane & Internet - Lavoro case study. Thus, as already mentioned it presents some differences from the 'canonical' approach due to the specific conditions in which the experiment has been carried out.

having enough individuals of the control group to achieve a statistical significance of the results of the evaluation, which is **the second step** in the procedure of the methodology itself.

According to the experience gained with the Italian case (Pane&Internet - Lavoro) that is described in the Box below, the control group can be constituted from at least three different sources:

- The applicants to the planned intervention over-exceeding the maximum number of planned participants. This depends on the budget and time constraints of the intervention and, although it is the best sample of individuals to be used for the control group of a RCT, however its number is usually limited and does not allow to achieve a statistical significance of the analysis;
- The existing mailing list of individuals that are available in the database of the intermediary and that have similar characteristics of those of the group that is going to be treated by the selected intervention but who have not taken part in the intervention by the randomly selection (the difference with the propensity score matching is that the selection of the control group is done before the treatment and therefore it is simpler to select with statistical significance). This is a second best option that however is not always available;
- Third party mailing list (database that is not property of the intermediary but that is available for the evaluators) with individuals of the same characteristics of those belonging to the group that is going to be treated. This was the case of Pane & Internet – Lavoro where the control group was selected from the same group of individuals belonging to the unemployment lists of the employment centres of the Emilia-Romagna region in which territory the elInclusion intervention under evaluation was planned to be delivered. This latter approach although it has the great advantage to provide the intermediary a large set of data for achieving a statistical significance of RCT results, at the same time, it may present privacy problems in the data provisioning and usage in the trial. As the Italian case suggests, the privacy issues related to the provisioning of sensitive data (e.g. name and telephone number of each individual to be included in the control group for a phone interview i.e. CATI – Computer Assisted Telephone Interview) may cause difficulties in the conduction of the evaluation and, if not carefully considered in advance, it may produce serious problems in the design and conduction of such impact evaluation approach. Therefore, it is very important that when planning such impact evaluation methodology the availability of control group data and all related privacy issues are verified and requests are made according to national laws and regulations, in order to avoid any problem during its implementation.

As a **third step**, evaluation experts, with the aid of the intermediaries, prepare the questionnaires taking into account the relevant impact variables affected by the treatment, the aim of the evaluation, the data availability and the context.

In the case of RCT there are three main questionnaires to be developed (see the Pane&Internet-Lavoro questionnaires in Section A4): 1) one for assessing that changes in the skills profiles of the participants before and immediately after the treatment to assess what changes the intervention has produced on the participants (e.g. learning curve); 2) a second to be administered right after the treatment in order to assess the short term outcomes (e.g. the application of what has been learned) of the intervention (some weeks as in the Italian Case experimentation , or, most preferably between 3 to six months after the treatment); 3) a third one to be administered after a longer period of time (e.g. 1 year) in order to appreciate the medium term impact of the intervention. In parallel, surveys with the same questionnaire are conducted on the control group and the treated group to collect both evidences of the status (e.g. employability status or employment conditions) of non-treated individuals and changes in the status of individual belonging to the treated group. To assess changes in employability conditions the time frame of analysis can

Table A10 - Operationalisation of the Randomised Controlled Trial Methodology

	WHAT	WHO	HOW	MIREIA eI2-IAF Toolkit
Step 0	Definition of the aims of the evaluation	Member/s of the management board of the intermediary; evaluation expert	Definition of the evaluation aims and principles on the basis of the needs of the intermediary of demonstrating their impact	
Step 1	Selection of the intervention to be evaluated and impact variables	Member/s of the management board of the intermediary; evaluation expert	Selection of the intervention and impact variables on the basis of: context analysis trends; relevance in comparison with other interventions of the intermediary; availability of data to conduct the analysis. According to the characteristics of the selected intervention, the related outcomes and direct impacts that are expected to have a causality relationship with the outputs of the intervention will be defined on the basis of the system of measurement indicators	Context analysis checklist System of measurement indicators
Step 2	Definition of the impact variables affected by the treatments and the aim of evaluation	Member/s of the management board of the intermediary; evaluation expert	According to the characteristics of the selected intervention, on the basis of the system of measurement indicators, outcomes and direct impacts will be defined that are expected to have a causal relationship with the outputs of the intervention. They are the impact variables to be evaluated with the RCT	System of measurement indicators
Step 3	Preparation of the list of individuals of the nTG to be interviewed	Evaluation expert, Responsible of the intervention Operational team of the intermediary	It can be done in three ways: extraction from the intermediary's databases of the list (name, e-mail, telephone number) of individuals having request to participate to the intervention that haven't been selected participants; extraction from the intermediary's database of a list of individuals (name, e-mail, telephone number) with the same characteristics of the TG but not involved in the intervention under evaluation; acquisition from third parties (e.g. employment centres) of the list of individuals (name, e-mail, telephone number) with similar characteristics of the TG.	
Step 4	Design of the questionnaires for TG before and immediately after the treatment	Evaluation expert, responsible of the intervention	Definition of the evaluation questions in relation to TG before the treatment and immediately after the treatment. Variables to be considered are related to the treatment (e.g. skills before/after the intervention); employability and/or working conditions before the intervention	Pane&Internet-Lavoro questionnaires
Step 5	Design of the questionnaires for TG in an agreed period of time (weeks, months, year/s) after the treatments	Evaluation expert, responsible of the intervention	Definition of the evaluation questions in relation to TG. Variables to be considered are employability and/or working conditions at the time of the survey	Pane&Internet-Lavoro questionnaires
Step 6	Design of the questionnaire for nTG to be used in the same period of time agreed in Step 5	Evaluation expert, responsible of the intervention	Definition of the evaluation questions in relation to nTG: reference data each participant (e.g. sex, age, qualification); employability and/or working conditions at the time of the survey	Pane&Internet-Lavoro questionnaires
Step 7	Data gathering for TG and nTG	Operational Team	On-Line questionnaire, CATI, Direct phone calls	
Step 8	Data Analysis and evaluation	Evaluation expert, responsible of the initiative to be evaluated	Statistical analysis of the information of TG and nTG collected with the survey	RCT methodology
Step 9	Reporting	Evaluation expert, responsible of the intervention	Explanation of the results achieved and recommendations	

usually be between 3 to 6 months after the intervention, while the evaluation of changes in employment status requires conducting surveys not earlier than one year from the intervention.

Instruments used to conduct surveys for both TG and nTG can be conducted by using emails or computer-assisted telephone interviewing (CATI) or making direct phone calls.¹⁰

After completion of the questionnaires the intermediaries can gather the data and evaluation can be performed with the help of experts to perform data analysis through econometric software (e.g. STATA) using the data collected and impact variables

A3.3. Matching and Propensity Score Matching

Statistical matching builds upon the same approach as the comparison of beneficiaries and non-beneficiaries. Instead of comparing all beneficiaries and all non-beneficiaries of the intermediaries' intervention, pairs of beneficiaries and non-beneficiaries resembling each other are constructed and the comparison is conducted only within those pairs. In the context of the ICT training program, we should find a non-participant for each participant who resembles most of his/her characteristics. Those characteristics should be both easy to observe and important determinants of the chances to find a job. In this view we will collect a series of personal and contextual data, such as age, gender, previous work experience and qualifications, as well as a series of indicators describing the economic context in which the two individuals operate. In this way we will end up with two groups of similar individuals, each pair being made up of one participant and one non-participant with analogous characteristics. The impact of the intermediaries' selected interventions can then be computed as the difference between the placement rate among those participants who have been selected as counterparts of non-participants, and the placement rate among non-participants. **The most common matching method is propensity score matching.** This approach is based on the premise that, for each firm that has been treated, it is possible to find at least one non-treated individual/organisation that is "close" enough to the treated as a counterpart. In this context "close" means that it exhibits a value for the propensity score very similar (if not identical) to the one observed for the treated firm. The propensity score is defined as the conditional probability of receiving the treatment and is usually estimated using logit or probit regressions. After having computed the propensity scores for all the firms in the dataset, it is possible to use this value to match individuals in the treated group with at least one individual in the control group.

Intuitively in Figure A2 the "N" represents a sample of non-beneficiaries, while the "B" represents beneficiaries, and the two matches are indicated with two small circles connected by an arrow. In any case the difference between the means of matched treated and non-treated is quite different from the difference between the means of the treated and the non-treated groups. There are various techniques for undertaking this matching process. Some use replacement while others do not, and some use more complex definitions of distance, but the logic in all these approaches is very similar; find a close match for the treated organisation within the group of untreated, using the values for the propensity scores.

There are three main types of propensity score matching:

- Nearest available matching, according to which each treated unit is matched with the one untreated unit having the most similar initial characteristics
- Radius matching, according to which each treated unit is matched with all of the untreated units having a propensity score within a certain degree of tolerance with respect to that of the treated unit

¹⁰ In the case of Emilia-Romagna as described in the Box it was decided to conduct the short term survey for the treated Group (TG) by using the mailing list and the informed consent collected from the participants to the training courses. While the non-treated group (nTG) was interviewed with a direct phone calls from a list of unemployed persons provided by the Emilia-Romagna employment centres where the sensitive information (a part from the phone number of the person) were hidden to the interviewers so to avoid the possibility to identify interviewed persons without his/her preliminary consent.

- Kernel Matching, in which the outcome of each treated unit is compared with a weighted average of the outcomes of all non-treated units

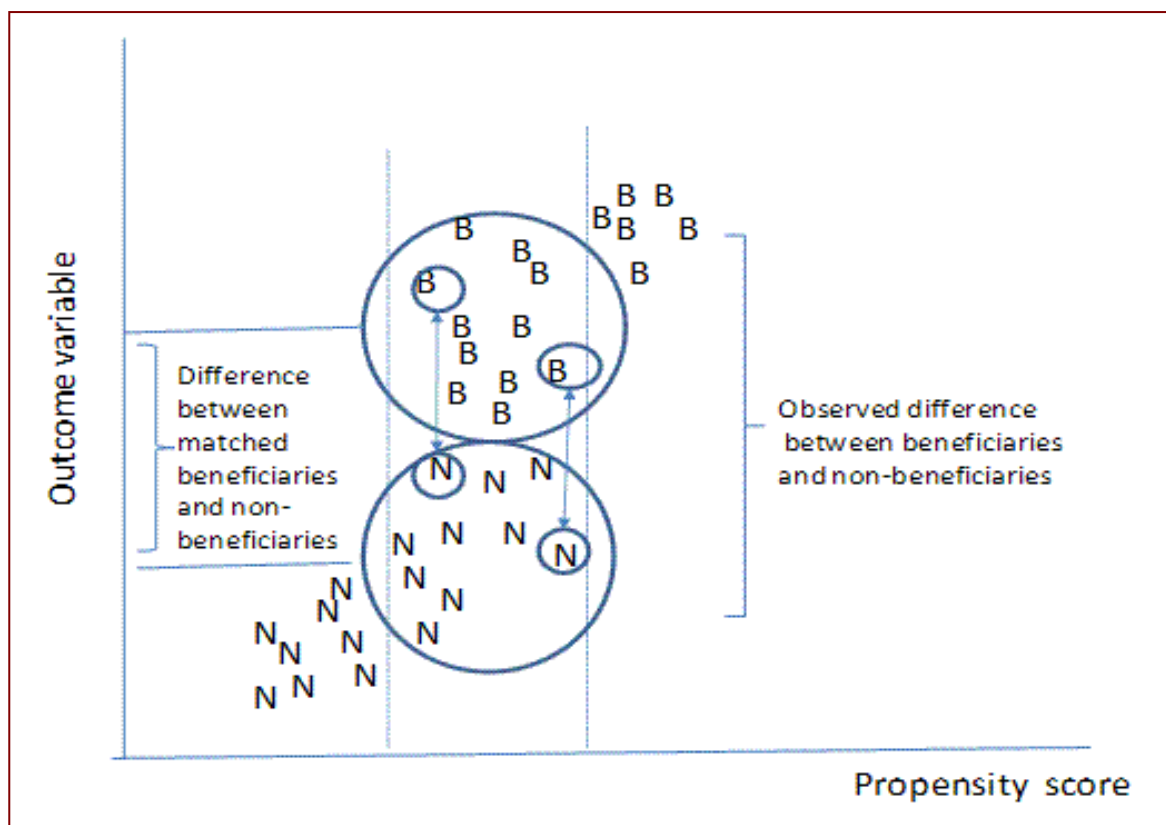


Figure A2 - Propensity score matching

Source: EVALSED

A3.4. Operationalisation of Propensity Score Matching methodology

In this paragraph we present the operationalisation of the propensity score matching derived from the experience conducted in the INN&CIA case study of Guadalinfo in Spain.

In particular Table A11 describes which are the key steps of the approach, the qualification of the persons that need to be involved in each of them, a summary of the activities that need to be carried out together with the tools that were developed during the testing phase of the MIREIA eI2-IAF and available as part of the MIREIA eI2-IAF Toolkit.

Similarly to the RCT methodology, before starting the process is obviously the aims of the evaluation which determines the impact variables we want to analyse. As a **first step** the intermediaries providing the treatment carry out the identification of the intervention to be analysed and impact variables by the mean of a context analysis and taking into account the availability of data and the relevance of the initiative.

Table A11 - Operationalisation of the Propensity Score Matching methodology

	WHAT	WHO	HOW	MIREIA eI2-IAF Toolkit
Step 0	Definition of the aims of the evaluation	Member/s of the management board of the intermediary; evaluation expert	Definition of the evaluation aims and principles on the basis of the needs of the intermediary of demonstrating their impact	
Step 1	Selection of the intervention to be evaluated and impact variables	Member/s of the management board of the intermediary; evaluation expert	Selection of the intervention and impact variables on the basis of: context analysis trends; relevance in comparison with other interventions of the intermediary; availability of data to conduct the analysis. According to the characteristics of the selected intervention, the related outcomes and direct impacts that are expected to have a causality relationship with the outputs of the intervention will be defined on the basis of the system of measurement indicators	Context analysis Checklist
Step 2	Definition of the impact variables affected by the treatments and the aim of evaluation	Member/s of the management board of the intermediary; evaluation expert	According to the characteristics of the selected intervention, on the bases of the System of measurement indicators will be defined the related outcomes and direct impacts that are expected to have a causality relationship with the outputs of the intervention. They are the impacts variables to be evaluated with the RCT	System of measurement indicators
Step 3	Preparation of the list of persons TG and nTG to be interviewed	Responsible of the intervention, Operational team of the intermediary	Extraction from the database of the intermediary the list (name, e-mail, telephone number) of former participants to the intervention to be evaluated and the list (name, e-mail, telephone number) of participants to other intermediary's interventions as control groups	
Step 4	Design of the questionnaire for TG	Evaluation expert, responsible of the intervention	Definition of the evaluation questions in relation to TG: reference data each participant (e.g. sex, age, qualification); variables related to the treatment (e.g. skills before/after the intervention); employability and/or working conditions	INN&CIA questionnaire
Step 5	Design of the questionnaire for nTG	Evaluation expert, responsible of the intervention	Definition of the evaluation questions in relation to nTG: reference data each participant (e.g. sex, age, qualification); employability and/or working conditions	INN&CIA questionnaire
Step 6	Data gathering for TG and nTG	Operational Team	On-Line questionnaire, CATI, Direct phone calls	
Step 7	Matching	Evaluation expert	Extraction of pairs of TG and nTG individuals, by using propensity score matching methods and the information gathered from TG and nTG	Propensity score matching methodology
Step 8	Data Analysis and evaluation	Evaluation expert, responsible of the intervention	Statistical analysis of the information of TG and nTG pairs of individuals matched	
Step 9	Reporting	Evaluation expert, responsible of the intervention	Explanation of the results achieved and recommendations	

The **second step**, also carried out by the intermediaries, simply consists in splitting the individuals between a treated and a non-treated group. Afterwards with the support of evaluation experts, the intermediaries prepare the questionnaire taking into account the relevant impact variables affected by the treatment, the aim of the evaluation, the data availability and the context. Then the questionnaire is administered to the treated and non-treated groups online (e.g. sending emails containing the link to the questionnaire). However, Computer Assisted Telephone Interviews (CATI) or making direct phone calls can also be conducted if sufficient resources are available.

After completion of the questionnaires the intermediaries can gather the data and evaluation can be performed with the help of experts to perform the matching and the data analysis through econometric software (e.g. STATA) using the data collected for the matching and impact variables.

A3.5. Other methods of counterfactual impact evaluation

Other common quasi experimental design methods that use different identification strategies to recover the counterfactuals and to control for the selection bias are: Difference-in-Difference or Double Difference, Regression Discontinuity Design, IE and Natural Experiments.¹¹ ([Abramovsky L et al., 2011](#); [Angrist, 1990](#); [Angrist, 2004](#); [Angrist & Evans, 1998](#); [Angrist et al., 1996](#); [Battistin et al., 2009](#); [Hahn et al., 2001](#); [Heckman et al., 1998](#); [Heckman et al., 1997](#); [Imbens & Lemieux, 2008](#); [Lechner M, 2002](#); [Lee & Lemieux, 2010](#); [Rosenbaum & Rubin, 1983](#)).

A3.5.1 Difference-in-Difference (DID)

The impact of a policy on an outcome can be estimated by computing a double difference, one over time (before and after the treatment) and one across subjects (between treated and non-treated). This simple method requires only aggregate data on the outcome variable, and at least three observations in time: two observations before and one observation after. A single difference between treated and non-treated does not clear the selection bias. However if we have data on the outcome variable for beneficiaries and non-beneficiaries observed before the intervention takes place, subtracting the pre-intervention difference in outcomes from the post-intervention difference eliminates one kind of selection bias, namely the kind related to time-invariant individual characteristics. If what differentiates beneficiaries and non-beneficiaries is fixed in time, subtracting the pre-intervention differences eliminates selection bias and produces a plausible estimate of the impact of the intervention. Unfortunately the difference in difference method implies that the trend in treatments and comparisons are the same. With only four points comparison it will be hard to investigate if this assumption is correct. However, with two additional pre-intervention data points the parallelism assumption becomes testable. In fact if sample average data is available for beneficiaries and non-beneficiaries for at least two time periods, the difference-in-differences (DID) method produces estimates of impacts that are in principle more plausible than those based on a single difference (either over time or between groups). An example of the application for this method is given within the scope of the programme URBAN I and II, which were initiatives funded through the Structural Funds in order to promote regeneration in urban areas suffering from high unemployment, high levels of poverty and social exclusion, and poor environmental conditions. More in particular Figure A3 shows how a reduction in the unemployment rate gap that can be interpreted as the impact of the programme.

¹¹ Natural experiments enable to follow identification strategy and recover unbiased causal parameters in very ingenious ways, but entailing a very high degree of technical complexity that we do not discuss here. The basic idea is that of an “involuntary” variation. This “involuntary variation” in the exposure to a policy allows a rather ingenious way to eliminate selection bias. Natural experiments are situations where either the natural functioning of things, or the intervention of government (but involuntarily) conspires to produce a setting to a large extent similar to that of a randomised experiment. Under these circumstances individuals or other units (geographical areas, firms, etc.) happen to be subject to what can be considered a treatment as a result of events that do not affect outcome variables and with respect to which selection bias is controlled for almost in the same way as in randomised experiments.

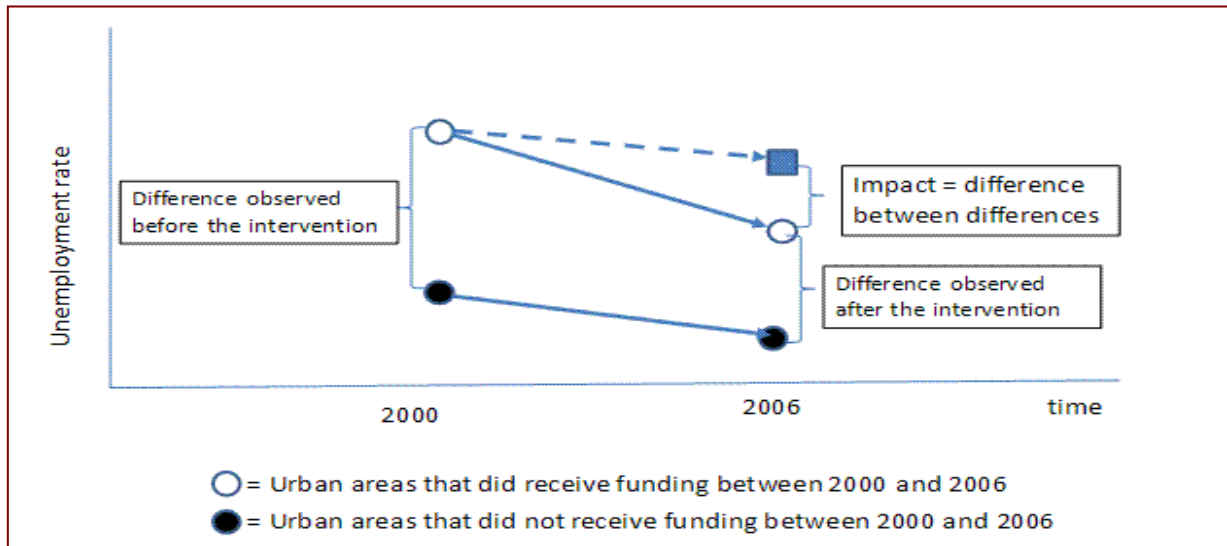


Figure A3 - Difference between a pre-programme and a post-programme difference

Source: EVALSED

A3.5.2 Regression Discontinuity Design (RDD)

Another solution that has been proposed in the literature mentioned above, is the use of the so called Regression Discontinuity Design. This method can be applied to situations in which it is possible to identify a clear cut-off level for treatment access and in which treatment status is based on observable characteristics. In this case the cut-off is defined by the eligibility rules of the project so that the treatment group is made up by people that just satisfy these criteria (and hence have access to the project), whereas the control group is composed of people that are just below the cut-off level and do not have access to the project.

In such a circumstance it is reasonable to assume that the control group and the treated groups are very similar against most criteria, and that the small difference in the variables guaranteeing access to treatment are not sufficient to justify a different value of the outcome variable, so that a difference in the latter can be entirely attributed to treatment. So the effects of the policy are estimated by comparing treated and non-treated at the margin of the threshold. Close to the threshold we are almost reproducing a situation of randomisation (where the selection bias is zero): the units have a total different treatment but they are very similar in all other respects (relevant for the selection process).

As an example, for the case of employment services to be provided online, instead of using a full randomisation, the local agency would offer the online training course only to applicants who reach a threshold in an attitudinal admission tests and then we compare outcomes only for those individual who scored just above and below such threshold. An example of application is given in Figure A4 where it is depicted a policy that provides investment subsidies to small enterprises (less than 15 employees) in order to improve the firms' performance in some dimension, such as sales or profits. The "Bs" are small enterprises and enjoy the treatment

The selection biased is erased by the fact that we compare firms with 14 employees with firms with 15 employees: it is reasonable to think that the difference between these two subgroups is negligible, so that around the threshold we have some sort of randomization.

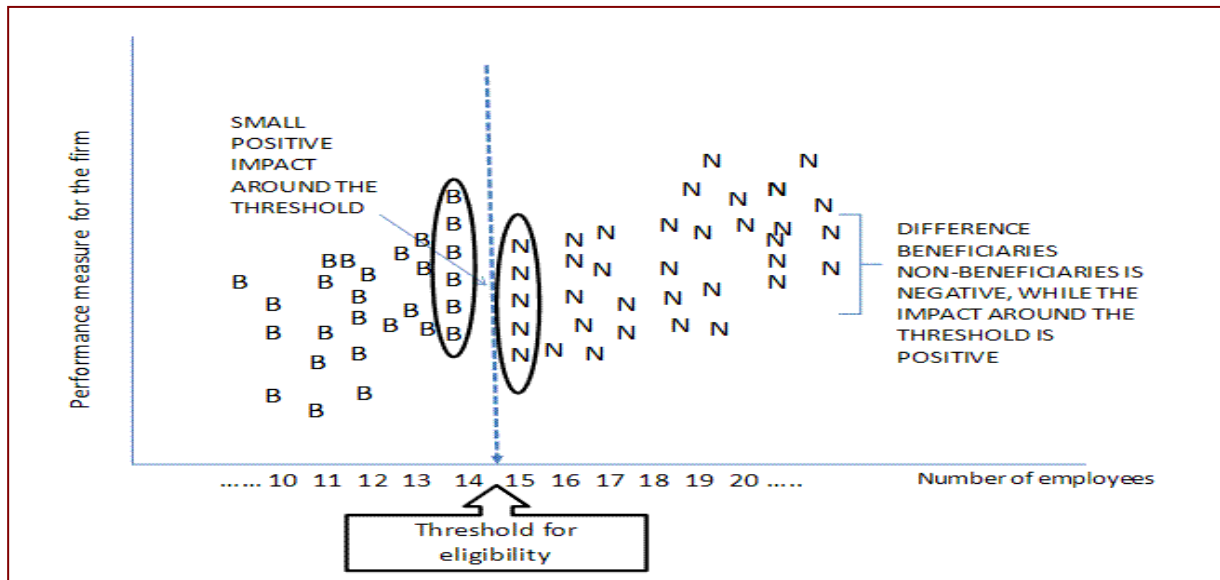


Figure A4 - Comparison around a threshold

Source: EVALSED

A3.5.3 Instrumental variables and natural experiments

This category of counterfactual impact evaluation methods is relevant when the exposure to a policy is to a certain degree determined by an external force which does not affect the outcome of the policy directly, but only indirectly, through its influence on the exposure. Angrist and Krueger (2001) define this situation as natural experiment, i.e. 'where the forces of nature or government policy have conspired to produce an environment somewhat akin to a randomized experiment'. This 'involuntary variation' in the exposure to a policy allows a rather ingenious way to eliminate selection bias. Natural experiments are situations where either the natural functioning of things or the intervention of government (but involuntarily) conspires to produce a setting to a large extent similar to that of a randomised experiment. Under these circumstances individuals or other units (geographical areas, firms, etc.) happen to be subject to what can be considered a treatment as a result of events that do not affect outcome variables and with respect to which selection bias is controlled for almost in the same way as in randomised experiments. There are two main approaches:

- Wald estimator, in which the treatment effect is identified by the ratio of the difference in average outcome between units eligible and not eligible for treatment, weighted by the probability of treatment induced by the instrument. This method is used in case of randomisation with partial compliance and randomised encouragement
- Two stage least squares, consisting of a first stage model predicting the probability of treatment as a function of the instrument and other variables, and a second stage in which the outcome equation is estimated using the predicted probability of treatment. This is the case of non-randomised natural experiments

An intuitive representation of the instrumental variable methodology in case of Research and Development (R&D) support projects is depicted in Figure A5. The "B's" represent the eligible firms, and together with the N's the eligible (but non recipients) make up the eligible group. On the other hand the ineligible firms are indicated with an "I".

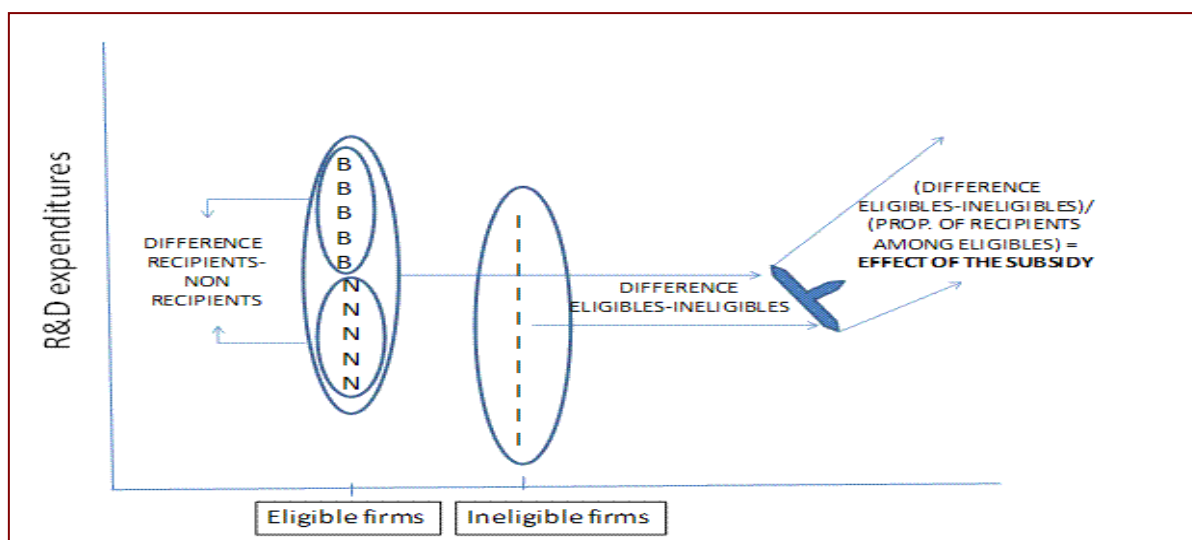


Figure A5 - Representation of the Instrumental Variable method (Wald Estimator)

Source: EVALSED

We can see then the difference recipient/non-recipient and the difference eligible/ineligible. We can estimate the effect of the treatment by scaling up the eligible/non-eligible difference with the fraction of firms receiving the subsidy among those eligible. To be noticed that in this case the eligible units are those firms operating in low population density.

A3.6. Simplified non counterfactual methods of impact evaluation

The case studies investigated to test the MIREIA eI2-IAF have shown that other pragmatic approaches to impact evaluation can also be adopted. Although, as discussed in Chapter 4 of the Final Report, these methods do not allow for recovering the counterfactual in a very rigorous manner, they represent to some extents simplified approaches to impact evaluation that can be applied when there is a “quasi” deterministic link between demand and offer of labour.

This is the case of the FIT case in Ireland where the demand of training courses is driven by the ICT sector and the case of FSRI in Poland that it is aimed at creating awareness on the choice of an ICT oriented university degree in a context where the ICT sector is clearly in shortage of ICT skills with an increase of forecast of ICT offer in the mid-term (see Final report for a description of the case studies).

A4 Question Bank

In this section we provide as examples the questionnaires that have been developed as part of the testing of the MIREIA eI2-IAF in four cases namely:

- 1) 'Pane & Internet - Lavoro' / (Bread & Internet – Jobs), Emilia-Romagna Region, Italy** – ICT training on Internet for job searching, in collaboration with Local Employment Services - <http://www.paneeinternet.it>
- 2) INN&CIA, Guadalinfo, Consortium Fernando de los Rios, Andalusia, Spain** - ICT-enabled social Innovation for employability and entrepreneurship - <http://www.guadalinfo.es>
- 3) Fast Track to IT (FIT), Ireland** - ICT-Skills training to address long term unemployment - <http://www.fit.ie>
- 4) Information Society Development Foundation (FRSI), Poland** - eSkills and your future profession, <http://frsi.org.pl>

In general terms questionnaires for supporting impact evaluation should be able to capture relevant variables and indicators defined according to the system of measurement indicators or additional more appropriate indicators identified depending on the typology of intervention.

The Questionnaires available in the Question Bank, although addressing specific interventions and characteristics of intermediaries and beneficiaries can be used as reference but, in most cases, should be adapted to the intervention/s that are under observation and the indicators that it has been decided to use as impact variables.

For this purpose, also according to the availability of data, resources and expertise (internal/external) and the overall strategy for monitoring and evaluation defined it can be decided to apply impact evaluation based on counterfactual (or simplified) methodologies interviewing (sample) of beneficiaries and control groups.

In this case the examples of how impact evaluation methodologies have been applied in the case studies can provide valuable insights and the questionnaires can be a starting point for building your own question bank and approach.

A4.1. Questionnaires for Randomised Controlled Trials: Pane & Internet – Lavoro, Emilia Romagna Region, Italy

The questionnaire has been developed to verify the effect of the participation to the '**Pane & Internet-Lavoro**' intervention. It was used to conduct the survey of participants (via PC at the beginning and at the end of the course and via email three weeks after the end of the training and for the CATI conducted on the control group.¹²

The objective of the questionnaire was to collect data in order to verify if the successful participation to the training course changed the employability condition of the participants with respect to similar groups of non-participants (short period objective); as well as to verify if the participation to the training course changed the employment condition of the participants with respect to similar groups of non-participants (mid-long term objective).

The Treated Group (TG) was composed of all participants to the training courses; while the non-Treated Group (nTG) included all potential participants (who applied to the call for application – tender in the Table A12) satisfying the requirements, but excluded because the places available for the course were completed.

Table A12 below provides a summary of the experimentation conducted to test the MIREIA eI2-IAF in the Pane & Internet Lavoro case study.

Table A12 –'Pane & Internet – Lavoro' Methodological approach for Randomised Controlled Trial

Group	Composition	Questionnaires administered	Valid responses collected
Treated Group (TG)	148 unemployed people between 35 and 65 years old attending the training course	- Pre-treatment questionnaire (A/TG questionnaire for RCT-P&I-L) administered on day 1 of the course, in paper format during April-May - Immediately post-treatment questionnaire (B/TG questionnaire for RCT P&I-L) at the end of the course, in digital format during April-May - Post treatment questionnaire (3WA/TG questionnaire for RCT P&I-L) 3 weeks after the treatment was concluded and sent by email during April-May	- 104 responses for the pre and post <i>treatment</i> questionnaires and - 53 responses for the questionnaire Post treatment (3 weeks after)

¹² The survey to the treated group was also complemented by a graphical survey composed of two set of images for assessing, based on psychological theories, the skills and use of ICT by participants before and after the intervention. This is not made available in this Toolkit.

Group	Composition	Questionnaires administered	Valid responses collected
Control Group/Non treated Group (nTG)	360 unemployed people between 35 and 65 years old not attending the training course	- nTG questionnaire (3WA/nTG questionnaire for RCT P&I-L) administered at the same time as the POST-T3W was administered to the TG, through a telephone interview between 2 nd -24 th May 2013	- 99 subjects of the control group were finally interviewed on the phone

The questionnaire developed is composed by 10 categories (see Table A13):

- Rank (V1)
- ID variables (V2)
- Demographic Variables (V3)
- Labour historical variables (V4)
- ICT skills variables (V5)
- ICT Infrastructure presence (V6)
- Labour search on Internet variables (V7)
- Working condition (V8)
- Searching methods used (V9)
- Social Value variables (nudge) (V10)

The questionnaire should be completed in 4 phases:

- Phase 1 – Before training course (indicated as B in the questionnaire in Table A12), when the treated group filled the online questionnaire
- Phase 2 – After training course (indicated as A in the questionnaire in Table A12), when the treated group filled the online questionnaire
- Phase 3 – Three weeks after the training course (indicated as 3WA in the questionnaire in Table 12), when the treated group filled the online questionnaire and the non-treated group filled the online questionnaire or was administered a survey through a CATI
- Phase 4 – Six months and one year after the training course: this phase was outside the duration of the experimentation. However it will be conducted by the Emilia Romagna Region using the same questionnaire and approach of the previous phase 3. At any rate in this phase the treated group should fill the online questionnaire and the non-treated group will fill the online questionnaire or will be administered a survey through a CATI.

Table A13 - Questionnaire for Randomised Controlled Trials (Pane & Internet, Emilia Romagna Region - Italy) (PRE-T/TG questionnaire for RCT-P&I-L)/ (POST-T/TG questionnaire for RCT P&I-L)/ (POST-T3W/TG questionnaire for RCT P&I-L)/ (nTG questionnaire for RCT P&I-L)

Before treatment/ After treatment/ 3 Weeks After treatment	Treated Group/nTG	Group of Variables to be analysed	Questions	Options										Information Availability				
B	TG/nTG	Ranked order (V1)	ranking position														Call for tender	Employment center
B	TG/nTG	ID (V2)	Family Name - First Name														Call for tender	Employment center
B	TG/nTG		eMail														Call for tender	Employment center
B	TG/nTG		Tel														Call for tender	Employment center
B	TG/nTG		Address														Call for tender	Employment center
B	TG/nTG	Demographic Variables (V3)	Gender	Male	Female												Call for tender	Employment center
B	TG/nTG		Age	<=18	>=19; <=21	>=22; <=25	>=26; <=35	>=36; <=55	>=56; <=65	>=66							Call for tender	Employment center
B	TG/nTG		Study degree	elementary school	intermediate school	upper intermediate school	degree	master									Call for tender	Employment center
B	TG/nTG	Labour history variables (V4)	How many working months you had in the last three years?	months														Employment center
	TG/nTG		In which sector was you employed?	NACE SECTORS(***)											Employment center			
B	TG/nTG		which is the average yearly wage you had in the last three years?	<30.000€/year	tra 30.000€/year	tra 50.000€/year	tra 70.000€/year	tra 100.000€/year	> 100.000€/year								participant	
B/A	TG/nTG(*)	ICT skills variables (V5)	computer usage (to be used visual questionnaire)	average weigh of the 5 answers													participant	
B/A	TG/nTG(*)		internet usage (to be used visual questionnaire)	average weigh of the 5 answers													participant	

B/3WA	FG/nTG (**	ICT Infrastructure presence (V6)	do you have any computer at home?	yes	no	purchase foreseen within 3 months												participant	
B/3WA	FG/nTG (**		do you have an internet connection at home?	yes	no	requested	purchase foreseen within 3 months												participant
B/3WA	FG/nTG (**		if you don't have an internet connection at home, where do you go for using internet?	library	internet café	internet point	friends/parents	I never use internet											participant
B/3WA	FG/nTG (**	Labour search on internet variables (V7)	how many hours a week do you spend for job searching in internet in the last month?	h/week														participant	
B/3WA	FG/nTG (**		how many useful contacts for job searching have you had on social networks last month?	number															participant
B/3WA	FG/nTG (**		how many social network have you used last month for job searching?	number															participant
B/3WA	FG/nTG (**		how many job advertisement have you found in internet to which you have replied in the last month?	number															participant
B/3WA	FG/nTG (**		how many job searching portals have you checked or from which have you received job vacancy notice?	number															participant
B/3WA	FG/nTG (**		how many job offers have you received by eMail in the last month?	number															participant

3WA	TG/nTG (**)	Working condition (V8)	Which is your working situation at the moment?	employed	not employed												participant		
3WA	TG/nTG (**)		which is your yearly wage?	<30.000€/year	tra 30.000€/year 50.000€/year	tra 50.000€/year 70.000€/year	tra 70.000€/year 100.000€/year	> 100.000€/year										participant	
3WA	TG/nTG (**)		In which sector are you employed?	NACE SECTORS(***)													partecipante		
B	TG	Searching methods used (V9)	which is the degree of frequency of the following searching methods have you used or are you using for job searching? (never - sometimes - quite often - often)	contacted employer directly/frequency	contacted public employment agency/frequency	contacted private employment agency/frequency	contacted friends or relatives/frequency	contacted school/university employment centre/frequency	contacted social network on internet/frequency	answered advertisement (on line; non on line)/frequency	filling on line forms on company sites/frequency	curriculum sent to job intermediaries (on line; non on line)/frequency	placed advertisement (on line; non on line)/frequency	Professional training course (training + stages)/frequency	Other (to be specified)/frequency	participant			
3WA	TG/nTG (**)	Searching methods used (V9)	which is the degree of frequency of the following searching methods have you used for job searching in the last month? (never - sometimes - quite often - often)	contacted employer directly/frequency	contacted public employment agency/frequency	contacted private employment agency/frequency	contacted friends or relatives/frequency	contacted school/university employment centre/frequency	contacted social network on internet/frequency	answered advertisement (on line; non on line)/frequency	filling on line forms on company sites/frequency	curriculum sent to job intermediaries (on line; non on line)/frequency	placed advertisement (on line; non on line)/frequency	Professional training course (training + stages)/frequency	Other (to be specified)/frequency	participant			
3WA	TG	Social Value variables (nudge) (V10)	how many person have get advantages from your experiences gained during the course?	number													participant		
3WA	TG		how many hours a week have you spent for social network participation in the last month?	h/week														participant	
3WA	TG		how much time you think to have saved by using eGovernment services in the last month?	none	few	some	a lot											participant	
3WA	TG		how much time do you think to have saved by using other digital services (e.g. on line purchase; on line booking; home banking; etc.) in the last month?	none	few	some	a lot											participant	

(*) only during the phone interview through a pick list or, in case the nTG member has internet, online questionnaire with visual questions can be used

(**) only during the phone interview

(***) NACE SECTORS available at: http://epp.eurostat.ec.europa.eu/portal/page/portal/nace_rev2/introduction

A4.2. Questionnaires for Propensity Score Matching: INN&CIA, Guadalinfo, Andalusia, Spain

The questionnaire has been developed to verify the effect of the participation to the INN&CIA intervention (treated group - TG) with respect to non-participation in the intervention (non-Treated group -nTG). The treated Group (TG) was composed by all beneficiaries that had both standard support activity from Guadalinfo network and the INN&CIA intervention while the non-Treated Group (nTG) included beneficiaries of standard support activities of Guadalinfo network but that did not take part on the specific INN&CIA intervention.

The objective of the questionnaire is to collect data in order to verify if the TG has improved their entrepreneurial capabilities in respect to the nTG, as well as the entrepreneurship projects of the TG were more performant than the nTG in the mid-long terms perspectives (3 years after INN&CIA intervention conclusion). It has to be taken into account that although the intervention has been running during 3 years, the year of creation and/or treatment of the projects is different for each project, so this may have an effect on the assessment of the impacts of the intervention.

Table A14 below provides a summary of the experimentation conducted to test the MIREIA eI2-IAF in the INN&CIA case study.

Table A14 –'INN&CIA' Methodological approach for Propensity Score Matching

Group	Composition	Questionnaires administered	Group
Treated Group (TG)	300 projects treated with Guadalinfo and INN&CIA	- Post- treatment questionnaire (Questionnaire for PSM-INN&CIA) submitted by email during 3 weeks in February 2013)	- 59 responses from the treated group and
Control Group/Non treated Group (nTG)	1000 non-treated with INN&CIA (Guadalinfo only)	- nTG questionnaire (Questionnaire for PSM- INN&CIA) submitted by email during 3 weeks in February 2013 (at the same time as questionnaires for TG)	- 280 responses from the non-treated group

The questionnaire (see Table A15) can be administered through online survey or CATI. It is composed by 5 categories or groups of impact variables and control variables used for the matching process:

- General information
- Impact variables at project level
- Impact variables at entrepreneurial level
- Control variables at project level
- Control variables at entrepreneurial level

In particular the analysis conducted in INN&CIA used the following impact variables:

- Number of employees
- Number of customers
- Survival of the enterprise
- Success of the enterprise
- Financial stability of the enterprise
- Stakeholder commitment
- ICT Knowledge of the responsible of the enterprise
- Entrepreneurial Knowledge of the responsible of the enterprise

The questionnaire should be administered in 1 phase to both TG and nTG either online or through a CATI. The questions should make reference to possible changes on the impact variables before and after the treatment in the case of the TG and to the evolution of the situation in the timeframe of the intervention in the case of the nTG.

Table A15 – Questionnaire for Propensity Score Matching (INN&CIA, Andalusia region-Spain) (POST-T/TG Questionnaire for PSM-INN&CIA)/ nTG Questionnaire for PSM- INN&CIA)

Class of variables	Group of variables to be analysed	Questions	Options						
General information	V0	Family name - first name							
		eMail							
		Telephone							
		Address and name of the project							
Impact variables at project level	V1a	Level of profits in the last year	<=10.000	10.000-30.000	50.000-80.000	80.000-100.000	>=100.000		
		Level of capital expenditure/investments in the last year	<=30.000	30.000-55.000	55.000-160.000	160.000-250.000	>=250.000		
		Level of turnover in the last year	<=50.000	50.000-100.000	100.000-300.000	300.000-500.000	>=500.000		
		Ratio of current assets to current liabilities in the last year	Number						
		Level of employment (FTE)	Number						
		Number of employees	Number						
		Number of customers	Number						
		Is the project still ongoing?	Yes	No					
		Level of voluntaries participating (FTE)	Number						
		Level of commitment of stakeholders in supporting the initiative	Very poor	Poor	Medium	Good	Very good		
		Degree of stability of financial support in time	Very poor	Poor	Medium	Good	Very good		
		Degree of public dependency of financial support	Very poor	Poor	Medium	Good	Very good		
		Impact variables at entrepreneurial level	V1b	How do you judge your entrepreneurial skills	Very poor	Poor	Medium	Good	Very good
How do you judge your ICT skills	Very poor			Poor	Medium	Good	Very good		

		Do you consider the initiative to be a success?	Yes	No					
		To what extent the success of the initiative is linked to ICT skills?	Very low	Low	Medium	High	Very high		
Control variables at project level	V2a	Industrial sector (NACE classification)							
		Year of establishment of the initiative							
		Project's phase	Phase 1	Phase 2	Phase 3	Phase 4			
		Knowledge intensiveness	Number of people with a degree						
		Is it and ICT intensive initiative?	Yes	No					
		Do you receive support from other initiatives?	Yes	No					
		What do you sell?	Products	Services	Both				
Control variables at entrepreneurial level	V2b	Gender	Male	Female					
		Age	<=18	18-21	22-25	26-35	36-55	56-65	>=66
		Study degree	Elementary school	Intermediate school	Upper intermediate	Degree	Master	PhD	
		Working months in the last three years	Number						
		Average yearly wage in the last three years	1.000€/year						
		Previous employment sector (NACE classification)							
		Previous or current participation in other social innovation activities	Yes	No					
		Previous or current participation in voluntary work	Yes	No					

A4.3. Questionnaires for simplified impact evaluation: FIT, Ireland

The questionnaires reported in this section have been used to develop a set of questionnaire to meet the particular circumstances and objectives of FIT – Fast Track to IT during the testing of the MIREIA eI2-IAF. More in particular the questionnaires were used to survey previous cohorts of treated participants and to compare their employment status and other characteristics with a group on not treated individuals (control cohort).

The questions developed enable the examination of an insight to participant perceptions and views (e.g. changes in attitudes towards further training or education). The utilisation of questions concerning circumstances before and after treatment for the previous cohort enables changes due to treatment to be investigated. Comparing the answers provided by the previous cohort with answers from control group can also provide relevant information on the impact of the intervention.

Table A16 below provides a summary of the experimentation conducted to test the MIREIA eI2-IAF in the FIT case study.

Table A16 – 'FIT': summary of methodological approach for simplified impact evaluation

Group	Composition	Questionnaires administered	Valid responses collected
Treated Group (TG)	915 Past students' /Previous cohort (2011-2012):	Online Questionnaire (POST-T1Y/TG questionnaire previous cohort FIT) distributed to past students by email in April 2013	301 responses from Past students' cohort (2011-2012):
Control Group/Non treated Group (nTG)	463 Past applicants'/control cohort (2011-2012)	Online Questionnaire (nTG questionnaire control cohort FIT) distributed to past applicants by email in April 2013	104 responses from Past applicants' cohort (2011-2012)

The questionnaires include: one set of background questions common for previous cohort and control group (see Table A17), one for the previous cohort (see Table A18) and another for the control group (see Table A19). The previous cohort and control cohort questionnaires are structured to see information about participant circumstances before treatment/application to the training course and their current circumstances (one year later). In these questions the word 'TREATMENT' can be replaced by the name of the intermediary or course/initiative they attended.

Data were collect using an on-line questionnaire including the following **impact variables**:

- Average hours per week using a computer before joining FIT, average hours per week using a computer at the time of the survey;
- Money saved by the participant per year from using the Internet;
- Employment-unemployment status before and after the programme/treatment;
- Participation to education or training before and after the programme/treatment;
- Participation to paid work, or self-employment (before and after the programme/treatment);
- Perception of prospects of unemployment in three years' time;
- Perception of prospects of paid employment in three years' time;
- Perception of computer skills (before and after the programme/treatment);
- Perception of employment prospects (before and after the programme/treatment).

Table A17 – Questionnaire for simplified method of impact evaluation: Introductory questions, common to all groups (FIT, Ireland) (POST-T1Y/TG questionnaire previous cohort FIT)/ (nTG questionnaire control cohort FIT)

	Indicator	Structure
BACKGROUND QUESTIONS	Name	_____
	Gender	<input type="checkbox"/> Male <input type="checkbox"/> Female
	Age	<input type="checkbox"/> Under 18 <input type="checkbox"/> 18-21 <input type="checkbox"/> 22-25 <input type="checkbox"/> 26-35 <input type="checkbox"/> 36-55 <input type="checkbox"/> 56-65 <input type="checkbox"/> over 65
	Date of start (TREATMENT)	_____ Month _____ Year
	Occupational status	<input type="checkbox"/> Employer <input type="checkbox"/> Paid Work <input type="checkbox"/> Unpaid work <input type="checkbox"/> Self-employed
	IF WORKING, average monthly gross income	<input type="checkbox"/> 0 to 999 euros <input type="checkbox"/> 1,000 – 1,200 <input type="checkbox"/> 1,201 – 1,500 <input type="checkbox"/> 1,501 – 1,700 <input type="checkbox"/> 1,701 – 2,000 <input type="checkbox"/> 2,001 – 2,500 <input type="checkbox"/> 2,501 – 3,000 <input type="checkbox"/> 3,001 to 3,500 <input type="checkbox"/> 3,501 – 4,000 <input type="checkbox"/> over 4,000 euros
	Benefits per year	_____ Euros <input type="checkbox"/> Not applicable
	Study degree	<input type="checkbox"/> None <input type="checkbox"/> Junior Certificate <input type="checkbox"/> Leaving Certificate <input type="checkbox"/> Advanced Certificate <input type="checkbox"/> Higher Certificate <input type="checkbox"/> Higher Diploma <input type="checkbox"/> Degree <input type="checkbox"/> Master’s Degree <input type="checkbox"/> Doctorate <input type="checkbox"/> Other _____

Table A18 – Questionnaire for simplified method of impact evaluation: Previous Cohorts (FIT, Ireland) (POST-T1Y/TG questionnaire previous cohort FIT)

Indicator	Previous cohort question	Structure Previous
ICT access and use		
Home computer access	Do you have access to a computer at home?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
Home computer access	Do you have access to a tablet at home?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
Home internet access	Do you have access to the Internet at home?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
If no home internet access, is there public Internet access within 1 km	If no home internet access, is there any public Internet access available within 1 km?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
Use of computing devices	Since leaving TREATMENT, how many hours per week do you spend using a computer or tablet?	_____ Hours <input type="checkbox"/> Not applicable
Use of computing devices	Since leaving TREATMENT, have you used a computer or tablet to obtain information?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
Use of computing devices for e-government	Since leaving TREATMENT, have you used a computer or tablet to access benefits or entitlements information online?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
Use of computing devices for e-government	Since leaving TREATMENT, have you used a computer or tablet to access government services online?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
Use of computing devices for other services	Since leaving TREATMENT, have you used a computer or tablet to access health information online?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
Use of public internet access facilities	Do you use public internet access points or internet centre facilities on a regular basis since leaving TREATMENT?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
Use of public internet access facilities	How many hours per week do you spend using public internet access points or internet centre facilities since leaving TREATMENT?	_____ Hours <input type="checkbox"/> Not applicable
Use of public internet access facilities	If you do not have an internet connection at home, where do you go to access and use the Internet?	_____ <input type="checkbox"/> Not applicable
Use of public internet access facilities	If you do not have home internet access, do you use a public Internet access point?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
Use of public internet access facilities	How many hours a week on average do you spend using public Internet access facilities?	_____ Hours <input type="checkbox"/> Not applicable

Access to information and services		
Ict use beyond working activities	Since leaving TREATMENT, have you used your ICT skills beyond your working activities?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
Use of computing devices for cultural activities	Since leaving TREATMENT, how often do you use a computer or tablet for cultural purposes?	<input type="checkbox"/> Always <input type="checkbox"/> Very frequently <input type="checkbox"/> Occasionally <input type="checkbox"/> Rarely <input type="checkbox"/> Never
Use of computing devices for eGovernment services	Since leaving TREATMENT, how many hours per month do you think you have saved by using eGovernment services?	_____ Hours <input type="checkbox"/> Not applicable
Use of computing devices for hobbies and entertainment	Since leaving TREATMENT, how often do you use a computer or tablet for hobbies and entertainment?	<input type="checkbox"/> Always <input type="checkbox"/> Very frequently <input type="checkbox"/> Occasionally <input type="checkbox"/> Rarely <input type="checkbox"/> Never
Use of computing devices for services and shopping	Since leaving TREATMENT, how much money do you think you have saved per year by using the internet to obtain services and goods?	_____ Euros <input type="checkbox"/> Not applicable
Basic digital skills development		
Computing skills	Since leaving TREATMENT, how much have you improved your ICT and computing skills?	<input type="checkbox"/> Improved a lot <input type="checkbox"/> Improved a little <input type="checkbox"/> Neutral <input type="checkbox"/> Decreased <input type="checkbox"/> Decreased a lot
ICT basic course completion	Have you completed the ICT basic course?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
ICT basic course completion - desire for further ICT skills development	Since leaving TREATMENT, have you undertaken any further ICT or computing courses or training?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
Obtaining recognised qualifications	Have you obtained any recognised ICT and computing basic qualifications since leaving TREATMENT?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
Advanced digital skills development		
ICT advanced course completion	Have you completed the ICT advanced course?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
ICT advanced course completion - desire for further ICT skills development	Since leaving TREATMENT, have you undertaken any further ICT or computing courses or training?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
ICT advanced course completion - level of achievement	Since leaving TREATMENT, how much have you improved your ICT and computing skills?	<input type="checkbox"/> Improved a lot <input type="checkbox"/> Improved a little <input type="checkbox"/> Neutral <input type="checkbox"/> Decreased <input type="checkbox"/> Decreased a lot
Obtaining recognised qualifications	Have you obtained any recognised ICT and computing advanced qualifications since leaving TREATMENT?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
Social innovation ability	Since leaving TREATMENT, have you used your ICT skills for social innovation purposes?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable

Numeracy, literacy and eLearning		
Literacy course - completion	Have you completed the literacy course?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
Literacy course - desire for further literacy skills development	Since leaving TREATMENT, have you undertaken any further literacy courses or training?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
Literacy course - increase in confidence	Since leaving TREATMENT, how confident do you feel about your literacy skills?	<input type="checkbox"/> Very confident <input type="checkbox"/> Confident <input type="checkbox"/> Medium <input type="checkbox"/> Worried <input type="checkbox"/> Very worried
Literacy course - increase in literacy skills	Since leaving TREATMENT, how much have you improved your literacy skills?	<input type="checkbox"/> Improved a lot <input type="checkbox"/> Improved a little <input type="checkbox"/> Neutral <input type="checkbox"/> Decreased <input type="checkbox"/> Decreased a lot
Literacy course - qualification	Since leaving TREATMENT, have you obtained any recognised literacy qualifications?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
Literacy level	How would you rate your level of literacy skills? (Beginning and end of period)	<input type="checkbox"/> Very good <input type="checkbox"/> Good <input type="checkbox"/> Medium <input type="checkbox"/> Poor <input type="checkbox"/> Very poor
Numeracy course - completion	Have you completed the numeracy course?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
Numeracy course - desire for further numeracy skills development	Since leaving TREATMENT, have you undertaken any further numeracy courses or training?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
Numeracy course - increase in confidence	Since leaving TREATMENT, how confident do you feel about your numeracy skills?	<input type="checkbox"/> Very confident <input type="checkbox"/> Confident <input type="checkbox"/> Medium <input type="checkbox"/> Worried <input type="checkbox"/> Very worried
Numeracy course - increase in numeracy skills	Since leaving TREATMET, how much have you improved your numeracy skills?	<input type="checkbox"/> Improved a lot <input type="checkbox"/> Improved a little <input type="checkbox"/> Neutral <input type="checkbox"/> Decreased <input type="checkbox"/> Decreased a lot
numeracy course - qualification	Since leaving TREATMENT, have you obtained any recognised numeracy qualifications?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
Numeracy level	How would you rate your numeracy skills?	<input type="checkbox"/> Very good <input type="checkbox"/> Good <input type="checkbox"/> Medium <input type="checkbox"/> Poor <input type="checkbox"/> Very poor
Technology supported literacy course - completion	Have you completed the technology supported literacy (eLearning) course?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
Technology supported literacy course - desire for further literacy skills development	Since leaving TREATMENT, have you undertaken any further technology supported literacy (eLearning) courses or training?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
Technology supported literacy course - increase in confidence	Since leaving TREATMENT, how confident do you feel about your technology supported literacy (eLearning) skills?	<input type="checkbox"/> Very confident <input type="checkbox"/> Confident <input type="checkbox"/> Medium <input type="checkbox"/> Worried <input type="checkbox"/> Very worried

Numeracy, literacy and eLearning (continued)		
Technology supported literacy course - increase in literacy skills	Since leaving TREATMET, how much have you improved your technology supported literacy (eLearning) skills?	<input type="checkbox"/> Improved a lot <input type="checkbox"/> Improved a little <input type="checkbox"/> Neutral <input type="checkbox"/> Decreased <input type="checkbox"/> Decreased a lot
Technology supported literacy course - qualification	Since leaving TREATMENT, have you obtained any recognised technology supported literacy (eLearning) qualifications?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
Technology supported numeracy course - completion	Have you completed the technology supported numeracy (eLearning) course?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
Technology supported numeracy course - desire for further numeracy skills development	Since leaving TREATMENT, have you undertaken any further technology supported numeracy (eLearning) courses or training?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
Technology supported numeracy course - increase in confidence	Since leaving TREATMENT, how confident do you feel about your technology supported numeracy (eLearning) skills?	<input type="checkbox"/> Very confident <input type="checkbox"/> Confident <input type="checkbox"/> Medium <input type="checkbox"/> Worried <input type="checkbox"/> Very worried
Technology supported numeracy course - increase in numeracy skills	Since leaving TREATMET, how much have you improved your technology supported numeracy (eLearning) skills?	<input type="checkbox"/> Improved a lot <input type="checkbox"/> Improved a little <input type="checkbox"/> Neutral <input type="checkbox"/> Decreased <input type="checkbox"/> Decreased a lot
Technology supported numeracy course - qualification	Since leaving TREATMENT, have you obtained any recognised technology supported numeracy (eLearning) qualifications?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
Undertaken course(s) to enhance literacy skills	Since leaving TREATMENT, have you undertaken any courses to enhance your literacy skills?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
Undertaken course(s) to enhance numeracy skills	Since leaving TREATMENT, have you undertaken any courses to enhance your numeracy skills?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
Undertaken technology supported course(s) to enhance literacy skills	Since leaving TREATMENT, have you undertaken any technology supported courses to enhance literacy skills?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
Undertaken technology supported course(s) to enhance numeracy skills	Since leaving TREATMENT, how often do you use eLearning services?	<input type="checkbox"/> Always <input type="checkbox"/> Very frequently <input type="checkbox"/> Occasionally <input type="checkbox"/> Rarely <input type="checkbox"/> Never
Undertaken technology supported course(s) to enhance numeracy skills	Since leaving TREATMENT, have you undertaken any technology supported courses to enhance numeracy skills?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable

Skills for employability / employment		
Employment income	What was your average annual income during the last three years?	_____ Euros <input type="checkbox"/> Not applicable
Employment sector	Since leaving TREATMENT, in which sector have you been employed?	_____ <input type="checkbox"/> Not applicable
Future employment prospects	IF UNEMPLOYED, how likely is it for you to obtain paid employment?	<input type="checkbox"/> Definitely <input type="checkbox"/> Very likely <input type="checkbox"/> Probably <input type="checkbox"/> Unlikely <input type="checkbox"/> Definitely not
Future employment prospects	What do you think your occupation will be in three years time?	_____ <input type="checkbox"/> Not applicable
Importance of digital skills to future career	How important do you think your digital skills will be for your future professional career?	<input type="checkbox"/> Very Important <input type="checkbox"/> Important <input type="checkbox"/> Moderatly Important <input type="checkbox"/> Of Little Importance <input type="checkbox"/> Not Important
Importance of treatment in improving employment prospects	How important was TREATMENT in improving your prospects of obtaining employment in the future?	<input type="checkbox"/> Very Important <input type="checkbox"/> Important <input type="checkbox"/> Moderatly Important <input type="checkbox"/> Of Little Importance <input type="checkbox"/> Not Important
Job search - Application frequency	Since leaving TREATMENT, to how many job adverts per month have you replied?	_____ Job adverts <input type="checkbox"/> Not applicable
Likelihood of obtaining paid employment	Since leaving TREATMENT, how likely is it for you to obtain a paid employment?	<input type="checkbox"/> Definitely <input type="checkbox"/> Very likely <input type="checkbox"/> Probably <input type="checkbox"/> Unlikely <input type="checkbox"/> Definitely not
Online job search	Since leaving TREATMENT, how many social networks have you used for job seraching purposes?	_____ Social networks <input type="checkbox"/> Not applicable
Online job search	Since leaving TREATMENT, how many hours per week do you spend searching for a job online?	_____ Hours <input type="checkbox"/> Not applicable
Online job search	Since leaving TREATMENT, how many useful contacts for job searching have you made on social networks?	_____ Contacts <input type="checkbox"/> Not applicable
Online job search - Responses to applications	Since leaving TREATMENT, how many job offers have you received by email following an application?	_____ Job offers <input type="checkbox"/> Not applicable
Online job serach	Since leaving TREATMENT, how many job portals have you used for job seraching purposes?	_____ Portals <input type="checkbox"/> Not applicable
Previous work situation	Have you been in paid employment in the last two years?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
Previous work situation	How many working months have you had in the last three years?	_____ Months <input type="checkbox"/> Not applicable
Previous working timespan	How many months of paid employment have you undertaken in the last two years?	_____ Months <input type="checkbox"/> Not applicable
Skills for employability or employment course completion - level of achievement	Since leaving TREATMENT, have you been able to find a job?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
Skills for employability or employment course completion - increase in confidence	Since leaving TREATMENT, how confident do you feel about applying for a job or further training?	<input type="checkbox"/> Very confident <input type="checkbox"/> Confident <input type="checkbox"/> Medium <input type="checkbox"/> Worried <input type="checkbox"/> Very worried
Skills for employability or employment course completion - increase in job searching ability	Since leaving TREATMENT, how often do you search for a job?	<input type="checkbox"/> Always <input type="checkbox"/> Very frequently <input type="checkbox"/> Occasionally <input type="checkbox"/> Rarely <input type="checkbox"/> Never
Skills for employability or employment course - desire for further skills	Since leaving TREATMENT, have you undertaken any further training about searching and applying for jobs?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable

Self employment and business start-up skills		
Likelihood of becoming self employed or starting a business	Have you received further training about becoming self-employed or starting own business since leaving TREATMENT?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
Likelihood of becoming self employed or starting a business	Since leaving TREATMENT, how likely is it for you to be self employed or start a business?	<input type="checkbox"/> Definitely <input type="checkbox"/> Very likely <input type="checkbox"/> Probably <input type="checkbox"/> Unlikely <input type="checkbox"/> Definitely not
Likelihood of becoming self employed or starting a business	Have you considered becoming self employed or starting a business since leaving TREATMENT?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
Likelihood of becoming self employed or starting a business	Have you ever been self employed or started a business?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
Self-employment or business start-up course completion - level of achievement	Since leaving TREATMENT, how much have you improved your digital degree?	<input type="checkbox"/> Improved a lot <input type="checkbox"/> Improved a little <input type="checkbox"/> Neutral <input type="checkbox"/> Decreased <input type="checkbox"/> Decreased a lot
Self-employment or business start-up course desire for further business skills development	Since leaving TREATMENT, have you undertaken any further entrepreneurship courses or training?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
Self-employment or business start-up course completion	Have you completed the entrepreneurship course?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
Self-employment or business start-up course completion - increase in confidence	Since leaving TREATMENT, how confident do you feel about your entrepreneurial skills?	<input type="checkbox"/> Very confident <input type="checkbox"/> Confident <input type="checkbox"/> Medium <input type="checkbox"/> Worried <input type="checkbox"/> Very worried
Self-employment or business start-up course completion - increase in social innovation ability	Since leaving TREATMENT, have you used your entrepreneurial skills social for innovation purposes?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
Community building		
Involvement in community activities	Since leaving TREATMENT, Have you become a donor or sponsor of eInclusion initiatives?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
Involvement in community activities	Since leaving TREATMENT, how many hours do you spend participating in community activities?	_____ Hours <input type="checkbox"/> Not applicable
Involvement in volunteering	Since leaving TREATMENT, how many hours do you spend participating in voluntary activities?	_____ Hours <input type="checkbox"/> Not applicable
Membership of local groups or clubs	Since leaving TREATMENT, have you become a member of a local group or club?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
Equality and inclusion		
ICT use for communicating with others (email or chat)	Since leaving TREATMENT, how often do you use ICTs for communicating with others (email or chat)?	<input type="checkbox"/> Always <input type="checkbox"/> Very frequently <input type="checkbox"/> Occasionally <input type="checkbox"/> Rarely <input type="checkbox"/> Never
Online social networking	Since leaving TREATMENT, how many hours per week do you spend participating in social networks?	_____ Hours <input type="checkbox"/> Not applicable

Table A19 – Questionnaire for simplified method of impact evaluation: Control Cohort (FIT, Ireland) (nTG questionnaire control cohort FIT)

Indicator	Control group question	Structure Control
ICT access and use		
Home computer access	Do you have access to a computer at home?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
Home computer access	Do you have access to a tablet at home?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
Home internet access	Do you have access to the Internet at home?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
If no home internet access, is there public Internet access within 1 km	If no home internet access, is there any public Internet access available within 1 km?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
Use of computing devices	how many hours per week do you spend using a computer or tablet?	_____ Hours <input type="checkbox"/> Not applicable
Use of computing devices	Do you use a computer or tablet to obtain information?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
Use of computing devices for e-government	Do you use a computer or tablet to access benefits or	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
Use of computing devices for e-government	Do you use a computer or tablet to access government	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
Use of computing devices for other services	Do you use a computer or tablet to access health information	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
Use of public internet access facilities	Do you use PIAP or internet centre facilities of the	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
Use of public internet access facilities		
Use of public internet access facilities	If you do not have an internet connection at home, where do	_____ <input type="checkbox"/> Not applicable
Use of public internet access facilities	If you do not have home internet access, do you use a public	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
Use of public internet access facilities	How many hours a week on average do you spend using public Internet access facilities?	_____ Hours <input type="checkbox"/> Not applicable
Access to information and services		
Ict use beyond working activities	Do you use your ICT skills beyond working activities?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
Use of computing devices for cultural activities	How often do you use a computer or tablet for cultural purposes?	<input type="checkbox"/> Always <input type="checkbox"/> Very frequently <input type="checkbox"/> Occasionally <input type="checkbox"/> Rarely <input type="checkbox"/> Never
Use of computing devices for eGovernment services	How many hours per month do you think you save by using eGovernment services?	_____ Hours <input type="checkbox"/> Not applicable
Use of computing devices for hobbies and entertainment	How often do you use a computer or tablet for hobbies and entertainment?	<input type="checkbox"/> Always <input type="checkbox"/> Very frequently <input type="checkbox"/> Occasionally <input type="checkbox"/> Rarely <input type="checkbox"/> Never
Use of computing devices for services and shopping	How much money do you think you save per year by using the internet to obtain services and goods?	_____ Euros <input type="checkbox"/> Not applicable
Basic digital skills development		
Computing skills	How would you rate your ICT and computing skills?	<input type="checkbox"/> Very good <input type="checkbox"/> Good <input type="checkbox"/> Medium <input type="checkbox"/> Poor <input type="checkbox"/> Very poor
Obtaining recognised qualifications	Do you have any recognised ICT computing basic qualifications?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable

Advanced digital skills development		
Obtaining recognised qualifications	Do you have any recognised ICT computing advanced qualifications?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
Social innovation ability	Do you use your ICT skills for social innovation purposes?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
Numeracy, literacy and eLearning		
Literacy level	How would you rate your literacy skills?	<input type="checkbox"/> Very good <input type="checkbox"/> Good <input type="checkbox"/> Medium <input type="checkbox"/> Poor <input type="checkbox"/> Very poor
Numeracy level	How would you rate your numeracy skills?	<input type="checkbox"/> Very good <input type="checkbox"/> Good <input type="checkbox"/> Medium <input type="checkbox"/> Poor <input type="checkbox"/> Very poor
Undertaken course(s) to enhance literacy skills	Have you ever undertaken any courses to enhance your literacy skills?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
Undertaken course(s) to enhance numeracy skills	Have you ever undertaken any courses to enhance your numeracy skills?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
Undertaken technology supported course(s) to enhance literacy skills	Have you ever undertaken any technology supported courses to enhance literacy skills?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
Undertaken technology supported course(s) to enhance numeracy skills	How often do you use eLearning services?	<input type="checkbox"/> Always <input type="checkbox"/> Very frequently <input type="checkbox"/> Occasionally <input type="checkbox"/> Rarely <input type="checkbox"/> Never
Undertaken technology supported course(s) to enhance numeracy skills	Have you ever undertaken any technology supported courses to enhance numeracy skills?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable

Skills for employability / employment		
Employment income	What was your average annual income during the last three years?	_____ Euros <input type="checkbox"/> Not applicable
Employment sector	In which sector are/were you employed?	_____ <input type="checkbox"/> Not applicable
Future employment prospects	IF UNEMPLOYED, how likely is it for you to obtain paid employment?	<input type="checkbox"/> Definitely <input type="checkbox"/> Very likely <input type="checkbox"/> Probably <input type="checkbox"/> Unlikely <input type="checkbox"/> Definitely not
Future employment prospects	What do you think your occupation will be in three years time?	_____ <input type="checkbox"/> Not applicable
Importance of digital skills to future career	How important do you think your digital skills will be for your future professional career?	<input type="checkbox"/> Very Important <input type="checkbox"/> Important <input type="checkbox"/> Moderatly Important <input type="checkbox"/> Of Little Importance <input type="checkbox"/> Not Important
Job search - Application frequency	On average, to how many job adverts per month do you reply?	_____ Job adverts <input type="checkbox"/> Not applicable
Likelihood of obtaining paid employment	How likely do you think you will to obtain a paid employment?	<input type="checkbox"/> Definitely <input type="checkbox"/> Very likely <input type="checkbox"/> Probably <input type="checkbox"/> Unlikely <input type="checkbox"/> Definitely not
Online job search	How many social networks do you use for job searching purposes?	_____ Social networks <input type="checkbox"/> Not applicable
Online job search	How many hours per week do you spend searching for a job online?	_____ Hours <input type="checkbox"/> Not applicable
Online job search	How many useful contacts for job searching do you have in social networks?	_____ Contacts <input type="checkbox"/> Not applicable
Online job search - Responses to applications	How many job offers have you received by email following an application?	_____ Job offers <input type="checkbox"/> Not applicable
Online job serach	How many job portals do you use for job seraching purposes?	_____ Portals <input type="checkbox"/> Not applicable
Previous work situation	Have you been in paid employment in the last two years?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
Previous work situation	How many working months have you had in the last three years?	_____ Months <input type="checkbox"/> Not applicable
Previous working timespan	How many months of paid employment have you undertaken in the last three years?	_____ Months <input type="checkbox"/> Not applicable
Skills for employability or employment course completion - increase in confidence	How confident do you feel about applying for a job or further training?	<input type="checkbox"/> Very confident <input type="checkbox"/> Confident <input type="checkbox"/> Medium <input type="checkbox"/> Worried <input type="checkbox"/> Very worried
Skills for employability or employment course completion - increase in job searching ability	How often do you search for a job?	<input type="checkbox"/> Always <input type="checkbox"/> Very frequently <input type="checkbox"/> Occasionally <input type="checkbox"/> Rarely <input type="checkbox"/> Never

Self employment and business start-up skills		
Likelihood of becoming self employed or starting a business	Have you ever received training about becoming self-employed or starting own business?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
Likelihood of becoming self employed or starting a business	How likely is it for you to be self employed or start a business?	<input type="checkbox"/> Definitely <input type="checkbox"/> Very likely <input type="checkbox"/> Probably <input type="checkbox"/> Unlikely <input type="checkbox"/> Definitely not
Likelihood of becoming self employed or starting a business	Have you ever considered becoming self employed or started a business?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
Likelihood of becoming self employed or starting a business	Have you ever been self employed or started a business?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
Self-employment or business start-up course completion - increase in social innovation	Do you use your entrepreneurial skills for social innovation purposes?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
Community building		
Involvement in community activities	Are you a donor or sponsor of eInclusion initiatives?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
Involvement in community activities	How many hours do you spend participating in community activities?	_____ Hours <input type="checkbox"/> Not applicable
Involvement in volunteering	How many hours do you spend participating in voluntary activities?	_____ Hours <input type="checkbox"/> Not applicable
Membership of local groups or clubs	Are you a member of a local group or club?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
Equality and inclusion		
ICT use for communicating with others (email or chat)	How often do you use ICTs for communicating with others (email or chat)?	<input type="checkbox"/> Always <input type="checkbox"/> Very frequently <input type="checkbox"/> Occasionally <input type="checkbox"/> Rarely <input type="checkbox"/> Never
Online social networking	How many hours per week do you spend participating in social networks?	_____ Hours <input type="checkbox"/> Not applicable

A4.4. Questionnaire for simplified impact evaluation, FRSI, Poland

The questionnaire aimed to verify the effect of the participation to the intervention 'eSkills and your future profession' implemented by FRSI in Poland. It aims at comparing the changes on selected variables between participants and non-participants in the intervention. The questionnaire entails 2 variants: a post-meeting survey for the current cohort (12 questions) and a survey for the control cohort (10 questions).

The objective of the questionnaire is to collect data in order to verify if the participation to the training course changes the career choice of the participants. The data collected belonged to the current and previous cohorts, comprising individuals who were subject to the treatment, and control cohort, comprising non-participants in the location of the meetings

Table A20 below provides a summary of the experimentation conducted to test the MIREIA eI2-IAF in the FRSI case study.

Table A20 – FRSI: summary of methodological approach for simplified impact evaluation

Group	Composition	Questionnaires administered	Valid responses collected
Treated Group (TG)	Current cohort: pupils (15-19 years old) attending upper secondary school or last grades of lower secondary school attending to the meetings	Post-meeting surveys to youth participating in the meetings (POST-T/TG questionnaire current cohort FRSI) . Paper questionnaire administered by the meeting organiser at the end of the event during April 2013	709 responses from 22 meetings collected
Control Group/Non treated Group (nTG)	Control cohort: pupils (15-19 years old) attending upper secondary school or last grades of lower secondary school non-attending to the meetings	Surveys to youth non-participants. Paper questionnaire administered by the meeting (nTG questionnaire control cohort FRSI) . organiser to a non-randomised or matching sample during April 2013	519 responses from 18 meetings collected

There are two types of questionnaires:

- Post-treatment survey with youth participating in the meetings (questionnaire related to the Current Cohorts/TG) that was collected in paper after the meeting by organisers (see Table A21).
- Survey for the control group of non-participants (youth people aged 15-19) in the same locations of the meetings (questionnaire related to the Control Cohorts/nTG) that was collected in paper by meeting organisers. These non-participants were selected based on convenience/opportunity of access to them (through schools' pupils, library visits, etc.) by the meeting organisers without randomising or matching the selection (see Table A22).

The impact variables analysed in the case study were the change in the participants' attitude to study and developing ICT skills, the assessment of the usefulness of the meetings for planning professional future and the importance of the meeting in improving employment prospects of participants.

The questionnaires can be administered in 1 phase to both TG and nTG either online, through a CATI or even in paper (as it was in the case under investigation). The questions should make reference to possible changes on the impact variables before and after the treatment in the case of the TG and to the evolution of the situation in the timeframe of the intervention in the case of the nTG.

Table A21 – Questionnaire for simplified method of impact evaluation: Current Cohort (FRSI, Poland) (POST-T/TG questionnaire current cohort FRSI)

Pre-survey with youth participating in the meetings that took place in the period of 5-15 th April.		
Number	Question	Answers
Q1	Your e-mail address	Open-ended
Q2	Gender	Female / male
Q3	How old are you?	Under 15 / 15/ 16 / 17 / 18 / 19 / over 19
Q4	Where do you live?	countyside / town up to 5000 inhabitants / city 5000-20000 inhabitants / city 20000-100000 inhabitants / city over 100000 inhabitants
Q5	How would you rate your ICT skills?	Very good/good/medium/poor/very poor
Q6	How many hours a week (on average) do you spend using a computer?	Number
Q7	How much money do you think you save each year from using the Internet to search information, obtain services and purchase goods?	None / A little / Some / Quite a lot / A lot
Q8	How much time do you think you save each year from using the Internet to search for information, obtain services and purchase goods?	None / A little / Some / Quite a lot / A lot
Q9	If you plan to continue your education what kind of education you would like to continue?	Social science, business, law/ Engineering, production, architecture / Health, social services / Humanities, art / Mathematics, informatics, science / Agriculture, veterinary / I don't plan to study at the university
Q10	In your opinion, how much impact will ICT skills have on your future education?	None / small / big / very big
Q11	In your opinion how much will your career path will depend on acquiring or deepening your ICT skills?	None / in a small degree / in a large degree / in a very large degree
Q12	Why?	I will get (better) job / I will earn more / I will make a career / I will be able to keep a job

Table A22 – Questionnaire for simplified method of impact evaluation: Control Cohort (FRSI, Poland) (nTG questionnaire control cohort FRSI).

Pre-survey with youth participating in the meetings that took place in the period of 5-15 th April.		
Number	Question	Answers
Q1	Your e-mail adress	Open-ended
Q2	Gender	Female / male
Q3	How old are you?	Under 15 / 15/ 16 / 17 / 18 / 19 / over 19
Q4	Where do you live?	countyside / town up to 5000 inhabitants / city 5000-20000 inhabitants / city 20000-100000 inhabitants / city over 100000 inhabitants
Q5	How would you rate your ICT skills?	Very good/good/medium/poor/very poor
Q6	How many hours a week (on average) do you spend using a computer?	Number
Q7	How much money do you think you save each year from using the Internet to search information, obtain services and purchase goods?	None / A little / Some / Quite a lot / A lot
Q8	How much time do you think you save each year from using the Internet to search information, obtain services and purchase goods?	None / A little / Some / Quite a lot / A lot
Q9	If you plan to continue your education what kind of education you would like to continue?	Social science, business, law/ Engineering, production, architecture / Health, social services / Humanities, art / Mathematics, informatics, science / Agriculture, veterinary / I don't plan to study at the university
Q10	In your opinion what are your chances for getting a job after completing your education?	Very good / good / average / poor / very poor

List of acronyms and glossary of technical terms

List of Acronyms

CATI	Computer-assisted telephone interviewing
CGE	Computable General Equilibrium
CTC	Community Technology Centres
DAE	Digital Agenda for Europe
DG CONNECT /DG CNET	European Commission Directorate General for Communications Networks, Content & Technology
EC	European Commission
ECEI	European Congress on eInclusion
ESF	European Social Fund
EU	European Union
FIT	Fast Track to IT
FRSI	Fundację Rozwoju Społeczeństwa Informacyjnego (in English Information Society Development Foundation)
IA	Impact Assessment
IE	Impact Evaluation
ICT	Information and Communication Technologies
IPTS	Institute for Prospective Technological Studies
JRC	Joint Research Centre
nTG	non-Treated Group
MIREIA	Measuring the impact of eInclusion actors on Digital Literacy, Skills and Inclusion goals of the DAE"
MIREIA eI2-IAF	MIREIA eInclusion Intermediary Actors - Impact Assessment Framework
OECD	Organisation for Economic Co-operation and Development
PAFF	Polish-American Freedom Foundation
PIAP	Public Internet Access Point
PSM	Propensity Score Matching
P&I-L	Pane & Internet – Lavoro
RCT	Randomised Controlled Trials
R&D	Research and Development
SIP	Social Investment Package
SROI	Social Return on Investment
SWOT Analysis	Strengths, Weaknesses, Opportunities and Threats
TG	Treated Group
UK	United Kingdom
USA	United States of America
V	Version

Glossary of technical terms

- **Action.** The fact or process of doing something, typically to achieve an aim. Intermediaries undertake actions to support the participants of their initiatives.
- **Actor.** The organisation that develop an action. It could be used as synonymous of stakeholder.
- **Cohort.** A group of people banded together or treated as a group. The intermediaries regarded a cohort as a group of students recruited and or working together or a 'year' group.
- **Community.** A group of people living together in one place
- **Counterfactual impact assessment methodologies.** These aim at evaluating the existence and the intensity of the cause-effect relationships between intermediaries' interventions and their expected impacts. There are essentially six main counterfactual impact assessment methodologies including: Randomised controlled trials; Matching.(including the propensity score matching); Difference-in-Difference (DID); Regression Discontinuity Design (RDD); Instrumental variables and natural experiments; and Self-reported counterfactuals;
- **Criteria.** A principle or standard by which something may be judged or decided.
- **Difference-in-Difference (DID).** It is a Counterfactual impact assessment methodology in which the impact of a policy on an outcome can be estimated by computing a double difference, one over time (before and after the treatment) and one across subjects (between treated and non-treated). This simple method requires only aggregate data on the outcome variable, and at least three observations in time: two observations before and 1 observation after. Unfortunately the difference in difference method implies that the trend in treatments and comparisons are the same. With only four points comparison it will be hard to investigate if this assumption is correct. However, with two additional pre-intervention data points the parallelism assumption becomes testable.
- **Digital Agenda for Europe (DAE):** it is the first of seven flagships initiatives under Europe 2020 and aims to help Europe's citizens and businesses to get the most out of digital technologies.
- **Digital inclusion.** Digital inclusion is a set of actions or policies intended to help people who are not online currently to be motivated, develop the skills and obtain access to affordable hardware, software, technical support/information and broadband connectivity, so they can begin to use the technology to improve their lives. The terms 'Digital Inclusion' and 'eInclusion' (see below) are used inter-changeably in this report to avoid the awkward juxtapositioning of words.
- **Effectiveness.** It provides a measure of the outcomes produced by a given intervention in relation with the output generated by the intervention itself. It can be evaluated only when outcomes are available, thus after a certain period from the completion of the intervention,
- **Efficiency.** It describes the extent to which time, effort or cost is used for the implementation of a given intervention. It is often used with the specific purpose of relaying the capability of a specific intervention to produce a specific outcome effectively with a minimum amount or quantity of waste, expense, or unnecessary effort.
- **eInclusion Intermediaries:** public, private and third sector organizations which intentionally address social inclusion goals through ICTs or promote the use of ICTs to enhance the socio-economic inclusion of marginalized and disadvantaged groups and of people at risk of exclusion
- **eInclusion.** eInclusion is a social movement whose goal is to end the digital divide, a term used to describe the fact that the world can be divided into people who do and people who don't have access to - and the capability to use - modern information technology. According to advocates, eInclusion has the power to: close the gap between developed and less developed countries; promote democracy and mutual understanding; and empower disadvantaged individuals, such as the poor, the disabled, and the unemployed. The terms 'eInclusion' and 'Digital Inclusion' are used

inter-changeably in this report to avoid the awkward juxtapositioning of words. A landmark in the EU policy for eInclusion was the 2006 Ministerial Declaration adopted in Riga that defined digital inclusion as meaning "both inclusive ICT and the use of ICT to achieve wider inclusion objectives.

- **Employability.** It refers to the combination of factors and processes that enable people to progress toward or find employment, to remain employed, and/or to advance in the workplace
- **Europe 2020 strategy.** It is an EU's strategy to deliver smart sustainable and inclusive growth. It establishes ICTs as a core element for five of its seven flagship initiatives the Digital Agenda for Europe, the European Platform against Poverty and Social Exclusion, An Agenda for New Skills and Jobs, Youth on The Move, and the Innovation Union.
- **European Index of Digital Inclusion (EIDI).** It intended to monitor and capture the level of advancement of digital inclusion in the EU27 and in all member countries and compare progress made between 2004 and 2009. The composite and longitudinal nature of the EIDI – based on the indexes measuring the sub-dimensions of access, usage and impact from 2004 to 2009 – would contribute to individuate the main obstacles to close the digital exclusion and to monitor progress that have been made in terms of the Riga targets. Its main objective is to provide policy makers with a useful tool to benchmark and assess the e-Inclusion processes. Once again, however, it is emphasised that due to the lack of micro-data the effective application of such model is hampered; thus pointing to the need of further elaborate an appropriate methodology for data gathering, involving directly end users, through eInclusion intermediary actors.
- **Evaluation.** In general, it consists of an in-depth study of an intervention which is carried out at a discrete point in time. It is distinguished in ex-ante evaluation - an evaluation conducted before the implementation of an intervention, also often referred to as an 'appraisal'; in-itinere or interim/mid-term evaluation - an evaluation conducted during the implementation of an intervention; and ex-post evaluation - an evaluation conducted either on or after completion of an intervention.
- **Grand Coalition for Digital Jobs:** It is an EU initiative aimed at increasing the overall supply of digitally skilled professionals and to better match supply and demand of digital skills.
- **Impacts.** It relates to the broader and aggregate longer term changes for the target individual and the economy and society as a whole, to which interventions contribute together with several other intervening variables. Two notions of impact can be distinguished, depending on whether these are effects occurring after a certain lapse of time (specific impacts) but are directly linked to the intervention; or longer term effects affecting a larger population (global impacts)., For instance, in the case of an ICT training course, an example of specific impact could be the percentage of trained people that have actually found a job (ICT related), while global impact could be the overall increase in the local system productivity and competitiveness or decreased unemployment.
- **Indicator.** It is a characteristic or attribute which can be measured to assess an intervention in terms of its outputs, outcomes or impacts. Output indicators are normally straightforward and can be usually measured through direct indicators (e.g. number of participants in a training course; cost of a training course). Outcomes and impact indicators may be more difficult to derive. It is often appropriate to rely on indirect indicators (or proxy indicators). Indicators can be either quantitative or qualitative.
- **Information.** Information is a stimulus that has meaning in some context for its receiver. When information is entered into and stored in a computer, it is generally referred to as data. After processing (such as formatting and printing), output data can again be perceived as information. When information is packaged or used for understanding or doing something, it is known as knowledge.
- **Inputs.** These are the human, material and financial resources involved in the implementation of an intervention (e.g. for an ICT training course we should consider the total cost of the training course, including costs for communication and awareness raising, planning and organisation,

venue, fees of trainers, ICT infrastructure and material used).

- **Instrumental variables and natural experiments.** This category is relevant when the exposure to the policy is to a certain degree determined by an external force which does not affect the outcome of the policy directly, but only indirectly, through its influence on the exposure. Angrist and Krueger (2001) define this situation as natural experiment, i.e. where the forces of nature or government policy have conspired to produce an environment somewhat akin to a randomized experiment. There are two main approaches:
- **Intervention.** In the context of this study an intervention is particular action or set of actions undertaken in a complementary manner to assist participants. Intermediaries may provide one or many interventions.
- **Matching.** It is a counterfactual impact assessment methodology. The most common matching method is the propensity score matching. This approach is based on the premise that, for each organisation that has been treated, it is possible to find at least one non-treated organisation that is “close” enough to the treated counterpart. In this context “close” means that it exhibits a value for the propensity score very similar (if not identical) to the one observed for the treated firm. The propensity score is defined as the conditional probability of receiving the treatment and is usually estimated using logit or probit regressions. After having computed the propensity scores for all the organisations in the dataset, it is possible to use this value to match organisations in the treated group with at least one firm in the control group. There are various techniques for undertaking this matching process. Finally, the data analysis is carried out by computing the difference between the average of the evolution or changes in the impact variables before and after the treatment for the treated and the non-treated groups. This approach works well if the evaluator has access to a representative sample of the underlying population and can control for all the variables determining the treatment status (the so called “selection on observables” assumption); otherwise the process can be bedevilled with the selection bias issue.
- **Measuring the impact of eInclusion actors on Digital Literacy, Skills and Inclusion goals of the DAE.** This is a two-years research project launched in 2012 by the Institute for Prospective Technological Studies of the European Commission’s Joint Research Centre (JRC-IPTS) together with the Directorate General Communication Networks, Content and Technology (DG CONNECT) with the aim to: 1) better characterise eInclusion intermediary actors, and 2) create adequate instruments to facilitate the measurement of their impact on social and economic terms.
- **Measuring.** Values made meaningful by quantifying into specific units. Measurements act as labels which make those values more useful in terms of details. For example, instead of saying that someone is tall, we can specify a measurement and specify that the individual is 6 feet tall.
- **Monitoring.** It is the continuous process of examining the delivery of programme outputs to intended beneficiaries, which is carried out during the execution of a programme with the intention of immediately correcting any deviation from operational objectives. Monitoring generates data, which can be used to measure progresses of activities and for evaluations.
- **Objectives.** A specific result that a person or system aims to achieve within a time frame and with available resources. In general, objectives are more specific and easier to measure than goals. Objectives are basic tools that underlie all planning and strategic activities. They serve as the basis for creating policy and evaluating performance.
- **Outcomes.** It refers to the direct and intermediate changes produced for specific constituencies as a result of the initiatives, whose occurrence depends also on some intervening variables. These can be distinguished in direct and indirect outcomes according to their distance from the output in terms of the number of possible intervening variables. For instance, taking the example of an ICT training course, direct outcomes could be the percentage of trained people that have actually improved their ICT skills, while indirect outcome could be the increase in self-confidence, or the increase in job offers received due to the improved skills in the use of ICT for job search.

- **Outputs.** It refers to the goods and services produced by an intervention, whose production is within the control of those implementing them (e.g. number of participants trained in an ICT training course, i.e. that have successfully completed the course).
- **Questionnaire.** List of questions asked to respondents, designed to extract specific information. It serves four basic purposes: to (1) collect the appropriate data, (2) make data comparable and amenable to analysis, (3) minimize bias in formulating and asking question, and (4) to make questions engaging and varied.
- **Randomised controlled trials.** It is a counterfactual impact assessment methodology. Randomised experimentations deliver a measure of the true impact of the intermediary's intervention and guarantees "internal validity", namely that the difference in mean impact variables between the treated and the untreated groups is a consistent estimator of the causal effect. Randomised experimentations are experimentations of social policies in which assignment to "treatments" is based on the results of a random assignment or lottery.
- **Regression Discontinuity Design (RDD).** It is a counterfactual impact assessment methodology. This method can be applied to situations in which it is possible to identify a clear cut-off level for treatment access and in which treatment status is based on observable characteristics. In this case the cut-off is defined by the eligibility rules of the project so that the treatment group is made up by people that just satisfy these criteria (and hence have access to the project), whereas the control group is composed of people that are just below the cut-off level and do not have access to the project. In such a circumstance it is reasonable to assume that the control group and the treated groups are very similar against most criteria, and that the small difference in the variables guaranteeing access to treatment are not sufficient to justify a different value of the outcome variable, so that a difference in the latter can be entirely attributed to treatment.
- **Resources.** An economic or productive factor required accomplishing an activity, or as means to undertake an enterprise and achieve desired outcome. The two main resources investigated in this study are capital/funding and labour/personnel.
- **Selection bias.** It consists of the fact that target population differs from counterfactual population due to pre-intervention features. A solution is the introduction of an identification hypothesis stating that pre-intervention variables are sufficient to 'reconstruct' the control group of non-beneficiaries (counterfactual)
- **Self-reported counterfactuals:** This approach consists of questioning assisted subjects directly and posing them counterfactual questions. This involves asking the recipients of public support how their employment-related behaviour changed, asking formerly supported people how the withdrawal of assistance affected their innovation related behaviour, and asking non-supported people how they think their innovation related behaviour would have changed had they received support.
- **Skills.** An ability and capacity acquired through deliberate, systematic, and sustained effort to smoothly and adaptively carryout complex activities or job functions involving ideas (cognitive skills), things (technical skills), and/or people (interpersonal skills).
- **Social value.** Social value describes the more abstract social objectives that some initiatives can achieve. These include objectives such as wellbeing, empowerment, happiness, inclusion and health.
- **SROI (Social Return on Investment).** SROI is an approach to understanding and managing the value of the social, economic and environmental outcomes created by an activity or an organisation.
- **Sustainability.** It aims to define the capability of the intervention to produce structural changes in the conditions of the beneficiaries of an intervention. Also in this case it can be evaluated only after a certain period of time from the completion of the intervention itself, using indicators that

allow to provide evidence of such structural changes (e.g. in the employment status of the beneficiaries of a specific intervention).

- **Stakeholder.** A person, group or organization that has interest or concern in an organization. In the context of this study examples of stakeholders are policymakers, organisations working with intermediaries and participants undertaking the initiatives provided by intermediaries.
- **Treatment.** Treatment is the term used in this study to describe the assistance, training or other activities provided by an intermediary to a participant at their initiative(s).
- **Unemployment.** Unemployment occurs when a person who is actively searching for employment is unable to find work. Unemployment is often used as a measure of the health of the economy. The most frequently cited measure of unemployment is the unemployment rate. This is the number of unemployed persons divided by the number of people in the labour force.
- **Variables.** A characteristic, number, or quantity that increases or decreases over time, or takes different values in different situations.

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