

Incentives to Business Investment in Skills:
**ELEMENTS FOR MONITORING AND EVALUATING
THE PROPOSED INSTRUMENTS**



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Foreword

The Italian Government's National Reform Programme 2021-27 includes among its objectives the development of a new set of policy measures to support investment in skills for the 'smart specialisation, industrial transition and entrepreneurship' of 'small and medium-sized enterprises'.

Through the project "Incentivising business' investment in skills in Italy", the Directorate-General for Structural Reform Support (DG REFORM) and the OECD aim to help Italian national authorities to identify and implement the reforms and processes that can meet this objective most effectively, taking into account good practices and lessons learnt from other countries in dealing with similar situations. The project also aims to increase the recruitment of skilled labour and employee training in small and medium enterprises, and to promote the collaboration between the various ministries involved in skills policies for firms, as well as between central government and other relevant stakeholders. The project is co-financed by the European Union through the Structural Reform Support Programme and implemented by the OECD, in cooperation with the European Commission.

This report is one of the results of that project. It sets out the elements of a possible system for monitoring and evaluating the instruments proposed under the project. This document was produced with the financial assistance of the European Union. The views expressed in this document in no way reflect the official opinion of the European Union.

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Executive summary

In the context of the OECD's technical support for the Ministry of Economic Development (MISE) as part of the European Commission's Structural Reform Support Programme (SRSP), this report sets out recommendations for designing a system for monitoring and evaluating two public policy measures to support investment in skills among micro, small and medium-sized enterprises (MSMEs) (OECD, 2022^[1]).

The document first outlines the elements needed for the system of monitoring and evaluation, before laying out the operational elements and proposing a set of indicators for each of the two policy measures covered by this analysis.

In presenting the differences between monitoring and evaluation, the paper emphasises how the monitoring system is used to check that everything is going according to plan and that inevitable deviations fall within a tolerance band. Beyond that, corrections need to be made either in the implementation process or, earlier on, while designing the instrument. To this end, the monitoring system must be composed of a set of meaningful indicators that can support the decision-making processes of funding entities and implementing parties, enabling them to correct any planning errors and guide the nascent public policies.

Accordingly, the monitoring and evaluation process cannot just be linear, but must also allow for feedback mechanisms and the possibility to proceed in reverse order, following a number of key steps as described in the figure below.

STEP 1 - Define the data needed for the administration of the instrument

The data form the basis of the monitoring system, making it possible to calculate 'feasibility indicators' (see Section 2.3);

STEP 2 - Define the implementation and outcome question(s) about the policy instrument

This step covers two crucial aspects:

- a. Supplementing the monitoring system with additional data and information that are/could be requested (to intermediate bodies and/or beneficiaries) when accessing the instrument and that therefore make it possible to calculate "semi-feasible indicators" (see Section 2.3). These indicators are not needed for administrative purposes, but are needed to evaluate the instrument's implementation status and to evaluate its effectiveness;
- b. Defining the data and information needed for evaluation purposes.

STEP 3 - Select the overall monitoring and evaluation system

This step defines the procedures to be adopted (within the Administration or in relation to external entities) by answering general but essential questions:

- what is the purpose of the overall system?
- who is it for?
- when should it be used?
- how should it be implemented?
- what external resources are needed, if any?
- what procedures apply?
- what communication tools will be used?

STEP 4 - Choose the most suitable monitoring and evaluation methods and tools, based on their suitability to answer the questions in Step 2.

The methods and tools to be used for monitoring and evaluation can be determined based on the evaluation questions (Step 2) and the choice of overall system (Step 3). This also entails technical decisions and the commitment of human and financial resources. In the first instance, a system of indicators can be developed based on existing data or data that are collected directly by the Administration/responsible party, without necessarily committing substantial resources to building ad-hoc databases. Conversely, the full implementation of the monitoring system – and in particular the evaluation system – inevitably demands more complex methods and greater commitments.

However, it should be noted that even drawing up an operational list of monitoring indicators requires careful consideration of several parameters in order to be truly effective. These parameters are: the ability to represent the priorities that were identified by the questions (Step 2); communicability, i.e. the possibility for non-experts to understand the system of indicators; the availability of reliable databases and background information; cost sustainability and sufficient time to update the databases.

***STEP 5** - Structure the monitoring and evaluation system by creating ad hoc sets of quali-quantitative indicators, as well as specific tools where deemed necessary and feasible.*

Having selected the monitoring and evaluation methods and tools, the next task is to structure the monitoring and evaluation system in detail, by setting specific procedures and responsibilities for the data collection and modulate it as a function of a degree of detail commensurate with the situation and end purpose.

The set of indicators, however, should not be considered final or comprehensive, as information can be added or removed or new data become available, should new needs arise.

Lastly, it is worth stressing that a monitoring and evaluation system based on a set of indicators loses some of its meaning if it is taken out of the context of the overall policy process. Qualitative evaluations can and should complement the information that is collected via the indicators, linking the information to the context of the public policy instrument.

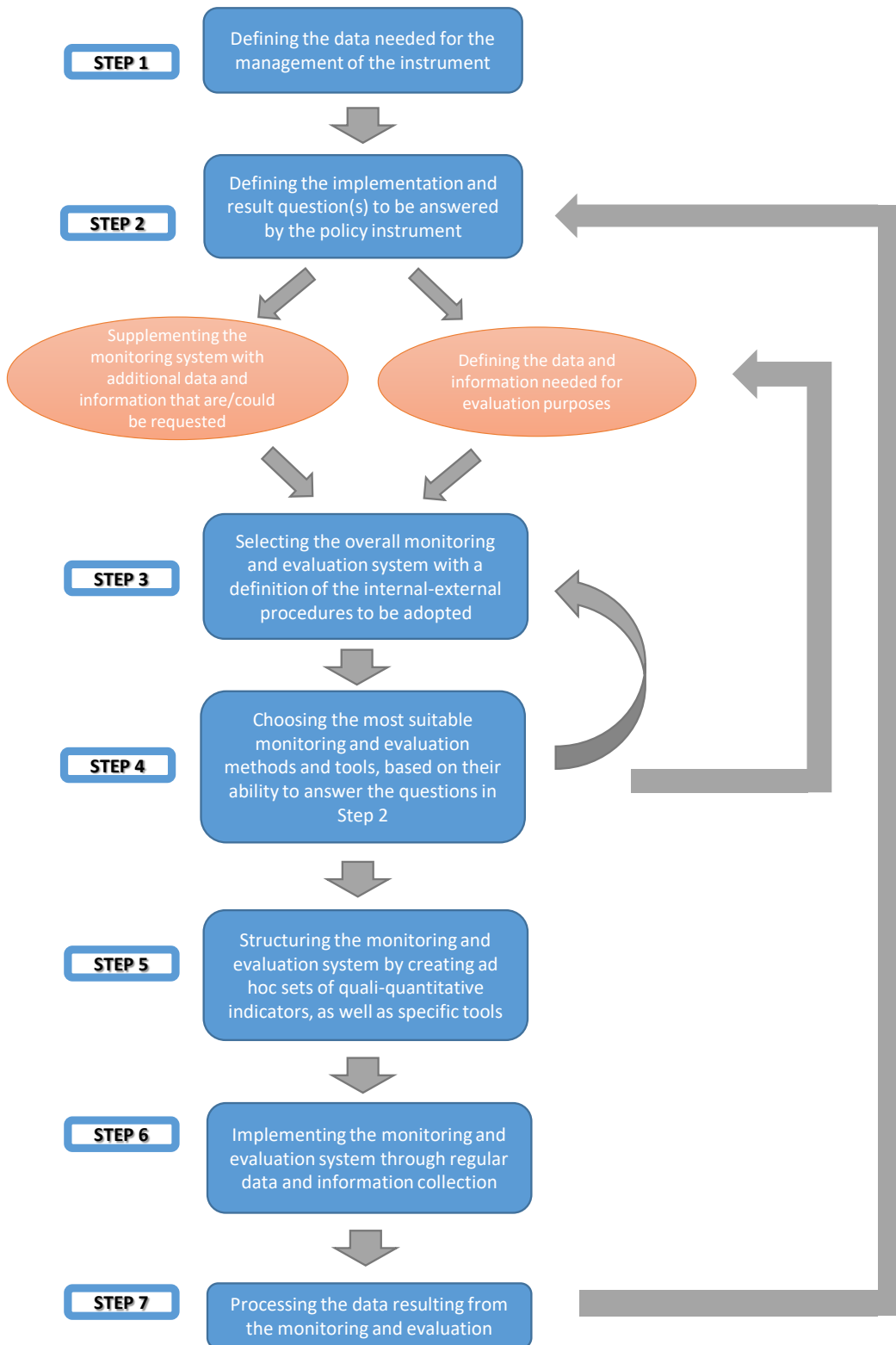
***STEP 6** - Implement the monitoring and evaluation system through regular data and information collection.*

Although the most important decisions have already been made, this phase requires time to gather all the necessary data and carry out gradual fine-tuning, often through trial and error.

***STEP 7** - Process the data resulting from monitoring and evaluation.*

During this phase, data are processed. and detailed monitoring and evaluation reports are prepared, cross-referencing the various chosen methods and tools in order to produce clear, useful summaries to answer the questions in Step 2, or to ask other questions.

Accordingly, this report proposes a set of monitoring and evaluation indicators and a number of evaluation approaches. The choices are based on some basic questions that may be of interest to the Administration, given the policy objectives underpinning the instruments proposed by the OECD (2022^[1]). As such, the elements in this report are not meant to encompass all the options that are available to the Administration, depending on the monitoring and evaluation questions the Administration wishes to address in relation to the two proposed public policy instruments.



1 Introduction

The aim of this section is to present the key features of the two public policy measures to support the acquisition and development of skills in Italian micro, small and medium-sized enterprises (MSMEs). It identifies some of their key characteristics that are relevant for designing the monitoring and evaluation system proposed hereinafter.

Both instruments put forward by the OECD (2022^[1]) - the new Training Consultancy Voucher ('Voucher Consulenza Formazione') and the Guidelines for Investments in Skills in Enterprise Networks - meet the need to address the age-old problem of skills mismatches in MSMEs, and how companies with poor planning and management skills contribute to the problem.

The two policies focus mainly on rigorous needs analysis, skills promotion and greater workforce engagement, as well as strengthening inter-institutional collaboration. They take into account the enormous diversity of Italian MSMEs and expand the Administration's range of action to cover companies with less organisational and planning capacity.

1.1 Investing in skills in enterprise networks

A network of stable working relationships is essential in boosting skills investment in MSMEs. To this end, the first tool aims to provide specific guidelines for building up an enterprise network, with common investment pathways that involve sharing the costs of training staff, holding shared training courses and hiring experienced staff.

The ultimate beneficiaries of this measure are primarily the existing formalised enterprise networks, along with new networks and/or individual companies that are interested in engaging in business-to-business collaboration through a joint project. To this end, the aim of the proposed support measure is to raise awareness of the advantages of working in an enterprise network when investing in human capital. Potential member companies do not need to work in the same sector or region. Furthermore, the measure does not currently place any restrictions on the size of the participating companies, nor on the horizontal or vertical nature of the collaboration.

Enterprise collaborations will be supported through the provision of direct services by intermediate bodies/organisations. In the OECD proposal, these bodies are third parties, other than the Administration, or market entities. They are chosen by the Administration itself and are able to offer offering a widespread presence in the region.

The priority types of service to be offered to support investment in network skills are as follows:

1. **Analysing skill needs within the network as well as for individual enterprises.** A needs analysis makes it possible to identify the type of training that is best suited to the company's needs. The intermediate body/organisation will assist the company with the skill needs mapping and with interpreting the results.
2. **Developing a common training plan for companies within the network and defining the roles of each company within it.** Building on the needs analysis, the second type of service aims to support networks and/or individual enterprises in developing a joint skills investment plan. Mapping at individual company level will also encourage clustering between businesses by identifying similarities.

3. **Sharing information on public support initiatives aimed at skills investment.** The third service concerns measures to raise awareness and provide information about the existence of public policies to support investment in skills in business partnerships. The available public support should be discussed directly with business owners as part of this service.
4. **Identifying new partners in the region to join the network.** The fourth proposed service aims to promote meetings among local businesses and entrepreneurs in the same region, as well as peer learning and mentoring activities. Embedding temporary managers in companies or establishing partnerships between companies and research institutes to benefit from their knowledge without permanently hiring new professionals has also proved effective.

As mentioned, the four services described are provided by intermediate bodies to MSMEs. OECD (2022^[11]) recommends that the Administration should aim at setting the strategic directions of the policy and having a coordinator role. The main functions for which strategic directions are needed are: determining priority services; defining minimum service standards for intermediate bodies; evaluating the work of these bodies; and listening to stakeholders.

1.2 The *Voucher Consulenza Formazione* (Training Consultancy Voucher)

The Training Consultancy Voucher is the second proposed public policy instrument aimed at funding part of the expenses incurred by MSMEs for training and skills development activities and for consultancy services. The purpose of the voucher is to encourage companies to invest in technical, managerial and soft skills. It is also designed to meet the costs of consultancy services leading up to training in innovation and technological transition.

The diversity of Italian companies was the reason for recommending a mechanism that would allow for flexible training in terms of content, delivery, and the workers who benefit from it.

The proposed measure targets workers who contribute to the development of the company and/or are involved in innovation projects. Workers who are offered training or organisational assistance are chosen based on their role within the company.

The eligibility procedures do not set out an extensive list of admissible types of innovation, or require proof that the innovation project has actually started. This means that companies with less planning capacity are not excluded and avoids ruling out forms of innovation that are not strictly connected to Industry 4.0 technologies.

To balance company needs with the provision of the service, OECD (2022^[11]) recommends that mapping the company's skills is made a mandatory condition for eligibility. For small businesses unable to carry out this type of analysis, support could also be made available for drawing up a training plan, leading to the establishment of two sub-types of voucher. The size of the support should be conditioned by the size of the company and the type of project selected for funding (planning or more complicated actions).

2 The monitoring and evaluation system

2.1 The objectives of the monitoring and evaluation system

The objective of a **monitoring system** is to enable the funding body and the implementing body (or bodies) to measure and consequently monitor the proper deployment of the instruments (to manage any deviations from what was established at the programming stage). The system is based exclusively on administrative/management data already available at the Administration and/or the beneficiaries of the allocated resources – data that are necessary for the proper management of the programme.

Not all data and information available to the Administration are necessarily incorporated into the monitoring system just because they are considered useful (or mandatory) for administrative and management purposes. Accordingly, to build a solid set of monitoring (and evaluation) indicators, a clear view is required of all potentially available data, so that they can be incorporated into the information system, even if they are not automatically used for management/administrative purposes.

The factors that determine the quality of a monitoring system and its ability to track the implementation of a policy, project or programme are:

- the precise definition of the objectives of each measurement, and the identification of indicators from the outset. It is important to determine the relevant information and the processes and dynamics to focus on at the beginning of the process;
- the feasibility, significance and relevance of the indicators against a wide range of possible indicators;
- the regular and periodic collection of quantitative and qualitative information and data;
- the implementation of a feedback process linking the monitoring results (indicators) and the various stages of project implementation.

As such, the **primary questions for a monitoring system** can be summarised as follows:

- Has the target population been reached?
- Are the activities being executed as planned?
- Has the management of the system been effective and efficient?
- Are the outputs (results) of the system as expected?
- Are there any unforeseen consequences of these activities?
- Do any elements of the project need to be changed and, if so, what are they?

It is therefore clear that the monitoring system is descriptive in nature and approach, and does not involve any merit-based judgements on the nature of the instruments and their relevance to the public policy in question. This is the task of the **evaluation** stage, when the data and information produced by the monitoring system are used to measure what has been achieved and to deliver judgements (evaluations) on the effectiveness of the policy.

The **primary questions for the evaluation** (by way of example) can be summarised as follows:

- ✓ Did the undertaken actions contribute to improving or changing the economic situation for which the policy was created (and to what extent)?
- ✓ Does the quality of the undertaken actions match the needs and expectations of the final recipients?
- ✓ What worked well, and what did not? What are the success factors and what factors might hinder replicability and dissemination?
- ✓ To what extent are the effects attributable to the programme and the actions taken, and not also to a combination of other factors?
- ✓ What are the success factors that would make it possible to replicate the actions taken?

The primary questions for the monitoring system – while customisable in terms of whatever they are supposed to measure – are naturally limited in number. It is possible however to have many more evaluation questions. The main reason for this is that the number of actors that are directly or indirectly involved in the operation is quite high, and each actor has specific interests and, therefore, specific points of view.

2.2 The design of the monitoring and evaluation system

As part of the overall approach outlined above, the system for monitoring and evaluation takes the form of a set of quantitative and/or qualitative indicators that can provide a snapshot of progress towards the objective being monitored and its effects in terms of policy needs.

The starting point is the monitoring indicators, which show the implementation status of the current measures. During the evaluation phase, they can be supplemented with an ad hoc collection of additional data and information to reach a verdict on the suitability of the measures deployed in relation to the identified needs, the policy effectiveness (results and impacts produced), and its efficiency. Therefore, having a monitoring system in place is extremely important in that it lays the foundations for a subsequent evaluation process.

While the role of a monitoring system ends when the action is finished, the evaluation generally takes place no sooner than six months after the end of the action, in order to allow its effects to become visible and measurable. The waiting time to measure the effectiveness of the action varies depending on what is being evaluated and the complexity of the intended change.

Lastly, monitoring indicators (and evaluation indicators) make it possible to identify best practices, which can be further disseminated.

Designing an integrated monitoring and evaluation system entails a series of steps that can be summarised as follows:

1. ***What do we want to observe?*** (defining the policy issue, i.e. what needs the policy instruments are meant to address);
2. ***Who do we want to observe?*** (who the targets of the instruments are and which actors are involved in the policy);
3. ***What do we want to know?*** (the questions underlying the monitoring and evaluation);
4. ***What is the Unit of Analysis (UA)?*** (The most disaggregated unit of interest for processing the data points. In this case, the single deployed instrument);
5. ***What is the Unit of Collection (UC)?*** (The most disaggregated level for the individual data point, which will then be recombined with the UA referred to above)
6. ***What are the input sources of the monitoring system?*** (which data and which sources);

7. *What are the required indicators and outputs?*
8. *What other data and information are required (if any)?* (which data and information cannot be collected systematically through the instrument's management system, but must be collected, periodically, on an ad hoc basis);
9. *How should it be done?* (organisational and management arrangements to put the policy information system into operation).

However, these steps build on what may be called '*question zero*', which is intrinsically linked to step 3 above: *what do we want to know at the end of the process?* What are the evaluation questions we will need/want to answer to?

Accordingly, the monitoring system can be 'customised' to each instrument, also in view of the subsequent evaluation phase. For example, to monitor a policy supporting participation to training courses to enhance individuals' employability, a suitable indicator is the number of training participants who found a job after a certain period. However, if the evaluation questions have been clarified before the programme starts – and these for instance require a breakdown of policy outcomes by the gender of the worker – then the monitoring system must not only capture the number of participants in the course, but also all accompanying information, such as the gender of the workers involved. As obvious and trivial as it may seem, stating the evaluation questions at the beginning of the support programme or upon implementing it is essential - and in practice quite rare.

2.3 Monitoring and evaluation system indicators

As mentioned above, the monitoring system returns data and information collected through a set of quantitative and/or qualitative indicators. To enable an effective overview, the proposed indicators must be **limited in number and suitable to answer the chosen monitoring and evaluation questions**.

The 'set of indicators' of a monitoring (and evaluation) system is generally broken down into sections representing the main steps of the policy implementation process.

Since the concept of a 'limited in number' is obviously subjective and may not be shared by all stakeholders, a consensus should be agreed upon and channelled towards a *minimum set of mandatory indicators*. This may also be determined by the complexity of the item being analysed or the particular challenges in collecting data. Selecting the minimum set of indicators is often contingent on the 'ease' of systematically collecting the data. It is therefore a good idea to highlight the degree of feasibility at the planning stage:

- **Feasible indicators**, i.e., indicators that can be built via the Administration/responsible party's usual internal administrative system, i.e. that which is set up to implement the policies in question.
- **Semi-feasible indicators**, i.e., indicators that can be provided through organisational/management/procedural changes that are relatively easy to implement. These data can be readily sourced by the Administration/responsible party (possibly, asking them to the beneficiaries), but would normally not be considered essential for policy implementation purposes. Collecting this information should take priority, because of its importance and simplicity to collect. For this to be the case, however, the monitoring and evaluation questions must have been stated at the outset.
- **New indicators**, i.e. indicators requiring ad hoc collection. There are two ways in which these indicators can be constructed: first, the Administration/responsible party can amend the organisational, management or procedural set-up for the policy, such as e.g. modifying the tool used to receive applications. Secondly, the Administration/responsible party can leverage external data sources: official sources, publicly-available databases, commercial databases, or ad hoc

surveys the Administration/responsible body may decide to put in the field, such as a satisfaction survey on the policy instrument. The focus of this set of indicators is on systematic data collection. In the first case (changing the Administration/responsible party's internal procedures or tools), periodic data availability is guaranteed, as is the case with the use of official sources. However, this may not be the case with external databases or ad hoc surveys and initiatives, as they are costly and, by nature, intermittent.

The present report proposes that the monitoring/evaluation system is organised as follows (see Section 3):

- A. **Context indicators**, which define the policy issue and the framework within which the instrument is deployed;
- B. **Programming indicators**, which determine the measures taken to solve the policy issue;
- C. **Demand indicators**, which measure the size and characteristics of the beneficiaries;
- D. **Process or delivery indicators**, which measure the internal effectiveness of the actions;
- E. **Output indicators**, which measure the end products of the actions.

Two extra sets of indicators deal with the evaluation effort:

- F. **Result indicators (gross impact)**, which measure the effects of the policy action at a given moment of time after its completion through indicators that approximate the outcome;
- G. **Outcome indicators (net impact)**, which measure the outcomes of the actions that are actually caused by the action taken. Assessing the net impact usually requires specific econometric calculations and a counterfactual approach (see Section 2.4).

Sections 3.1 and 3.2 describe the proposed set of possible indicators (although not all of them are necessary), and provide:

- a description of the objectives of each indicator.
- the feasibility, significance and relevance of the indicator against a wide range of possible indicators;
- some guidelines for the regular and periodic collection of the data needed to calculate the indicator and its timing, so that changes compared to the pre-policy situation can be verified.

2.4 Result and outcome evaluation

As mentioned above, a set of monitoring indicators can provide a snapshot of the policy implementation status.

In contrast, evaluating the measure can make use of the headline indicators above, but it is usually more complex and articulated. Several dimensions can vary across policy objectives and the needs of the Administration:

- the nature of the evaluation questions (effectiveness in relation to the original needs, efficiency, quality, satisfaction of beneficiaries, etc.);
- the timing of the responses (at the end of the programme, after six months, one year, five years, etc.);
- the feasibility of the evaluation of net effects (effects of the programme that are attributable to the programme itself) (net effects) vs gross effects (proxies for the programme's impact).

The "Evaluation design" therefore defines the evaluation questions, the timing of the data collection that is needed beyond the monitoring system, and the methodologies and analytical tools.

The evaluation of public policy instruments such as these generally focuses on the effectiveness of the action in relation to the original needs, and consequently on the effects that the actions taken have produced.

However, merely evaluating the (gross) effects, i.e. the change to (or elimination of) the need that gave rise to the policy, does not mean that these effects can be directly attributed to the policy, since the effects can arise in a very complex and diverse – regulatory, social, economic, etc. – context that has itself changed over time for reasons other than the policy.

Accordingly, the **‘key’ evaluation question summing up the degree of success of a public policy instrument** can be stated as follows:

To what extent can the observed effects be attributed to the instrument deployed? To what extent would these effects have occurred even in the absence of the instrument?

Evaluating net effects is fairly complex, both from a methodological point of view and in terms of the cumbersome nature of the evaluability conditions involved, given that a counterfactual evaluation is a prerequisite (see below). Very often, therefore, evaluation is limited to assessing results known as “proxies” (gross effects) of the net effects. For example, if a worker who has used the Training Consultancy Voucher improves his or her professional status, this improvement is attributed to the effect of the Voucher. This is clearly an approximation that does not consider the worker’s starting point, the company’s socio-economic context, the characteristics of the company itself, etc.

2.4.1 Evaluating net effects (counterfactual evaluation)

The counterfactual evaluation estimates the change in the result variable that is causally attributable solely to the measure under consideration, i.e. in this case to the two public policy instruments implemented.

Only a counterfactual evaluation – i.e. establishing a reasonable scenario in which the beneficiaries would presumably have found themselves if they had not received the support provided by the two policies in question – can show us the actual role of the instrument used, by isolating it from the other individual and contextual variables that may have influenced the outcomes. To this end, a control group needs to be identified, i.e. a group of companies that should be as similar as possible in all observable respects to the group of companies that benefited from the support, except for the support itself. The quality of the control group is crucial to the validity of the evaluation. Generally, enterprises that receive support have different characteristics to those that do not. For example, they might operate in a more disadvantaged area with less market potential, face greater lending restrictions, be more or less efficient, have a project to deliver or not, etc. Therefore, a simplistic comparison between beneficiaries and non-beneficiaries runs the risk of mirroring this reality, rather than the effect of the policy itself.

A valid evaluation requires that results are not distorted by such a systematic difference between beneficiaries and non-beneficiaries of state aid (the so-called selection effect), which in turn depends on how the control group is chosen. A number of reliable methods were developed in the past few decades to tackle this problem. The choice of method depends on the policy to be evaluated.

In the case at hand, establishing a reliable control group requires information on the complete lists of companies that have carried out skills investment projects or of personnel that have applied for the Training Consultancy Voucher, for example. The list must include everyone, even those who did not receive funding (did not meet the requirements; submitted substandard proposals; were eligible for funding but the resources had run out). A merit-based ranking (i.e. with a scoring system for the quality of the application) or even simply a time-based ranking (first come, first funded) makes it possible to identify a group of firms, ranging between the least performing funded firm and the best performing firm that did not get funded, that could justifiably be set up as a recipient vs control group.

If full information is available on the ranking scores that determine whether funding was granted, the analysis can be carried out using a **“Regression Discontinuity Design”** approach. Here, the impact estimate

is obtained by comparing the outcome variable values of beneficiary and non-beneficiary firms with scores around the threshold that determined whether or not funding was granted.

Another counterfactual approach is **Propensity Score Matching**. Here, an ad-hoc control group is made by non-beneficiaries that are as similar as possible to beneficiaries, based on a number of observable characteristics. For example, in beneficiary firms, workers who took up the training paid for by the Voucher can be matched with workers who had the same observable characteristics (e.g. age and employment status) but who did not benefit of the voucher. Alternatively, companies that are network members (or have just joined the network because of the policy) can be matched with similar companies (by sector, size, geographical location) that have not joined.

This second method is probably more difficult to apply for the recommended instruments, as it requires information on a group of firms (the control group) that did not interact with the Administration. Conversely, the *Regression Discontinuity Design* approach means that the analysis can simply leverage information by the applicants for public support, even if they did not eventually receive it. Still, information on these firms after the period of public support for the treated firms would need to be collected on an ad-hoc basis. This methodology also overcomes the major methodological problem whereby only firms with a certain unobservable level of motivation (interest, or need) apply for support (selection effect). By comparing applicants that received the support with those that did not, the effect of the unobservable motivation to apply on the different outcome for these two groups of firms cancels out.

The counterfactual approach is more effective in estimating the effect of the policy intervention. It is therefore particularly useful when the aim is to study and give a more focused demonstration of the changes that are exclusively connected to the action, weighing up the positive and negative influences that may have occurred in the meantime and affected the outcome.

It should be noted, however, that a counterfactual approach is often complex and expensive to implement. It needs to be planned simultaneously with the deployment of the instrument, so that the control group can be properly identified. Therefore, if such an evaluation is to be carried out, the entity in charge of the evaluation should be involved at an early stage in the deployment of the instrument.

2.4.2 Other evaluation approaches

Other approaches that use methods of **monetising the generated impacts** (e.g. cost-benefit analysis or Social Return on Investment - SROI) can also prove useful. By assigning a monetary value to the generated benefits, these methods quantify the social benefits of the intervention and correlate them with economic outcomes such as operating costs and investments. Assigning a monetary value to something that does not have one by nature (i.e. the societal benefits), however, can be difficult. On the upside, the resulting indicators are usually directly comparable to other traditional financial indicators.

In any case, the quantitative evaluation (gross or net effects) can be complemented by a **more qualitative evaluation** (the result of which can also be translated into summary indicators). A qualitative evaluation can capture the viewpoints of the various stakeholders along with specific features of the context in which the policy is deployed, which are typically difficult to estimate quantitatively. This could take place, for example, through **interviews and/or focus groups** with managers of the funding Administration, intermediate bodies, beneficiaries, and ultimate recipients, or through a beneficiary **satisfaction survey**.

A **pre-post approach** could also be adopted to gather quantitative and qualitative information on the project's contribution to the intended changes (e.g. increased knowledge as a result of training). This takes the form of a measurement effort before and after the implementation of specific project activities, by means of an ad hoc questionnaire.

Finally, in the specific case of investments in the skills in a network of firms, the use of **Social Network Analysis (SNA)** can be interesting. This analytical tool can be used to study, measure and represent social relations between individuals, groups, organisations or other entities that are involved in the same information and knowledge exchange process. The analysis requires relational data, i.e. contacts, ties or

more generally any link that constitutes a relationship between two entities, which represent the nodes of the network.

There are various ways to apply Network Analysis to the study of social phenomena; which one to use depends on the specific aims of the research and the type of network being analysed. For example, in the case of the instruments under consideration, the analysis could aim to ascertain whether and to what extent the policy's targets were able to leverage the policy intervention to create and consolidate business networks. The methodological approach would then mostly rely on a specific network model, the **ego-network**¹, that represents well the behaviour of a single actor in the network, and the ways specific nodes are embedded in local social structures. Ego-networks are networks that are composed of a central node (ego) and a set of entities that are connected to it.

In this case, the Network Analysis first verifies whether and to what extent the central node was able to: 1) involve the entities already in its network in the skills investment project, 2) increase its number of connections by establishing new partnerships, and/or 3) preserve over time the connections that were established thanks to the policy.

Secondly, the analysis can establish some facts for *each* participating entity, and in particular:

- Reconstruct and represent the network of closest ties (partners) before/during/after the policy intervention;
- Compare the size of the actual network with the size of the partnership in place before the policy intervention or the investment in skills. This can then be used to measure the network's success in expanding itself (*Coverage Indicator*);
- Evaluate the nature of the connections created by the network after the policy intervention, taking into account both the sustainability over time of such connections (*Sustainability Indicator*), as well as the policy's capacity to create new networks in the region (*Innovation Indicator*).

¹ For a methodological discussion see Everett and Borgatti (2006_[3]) or Halgin and Borgatti (2012_[4]).

3 Monitoring and evaluation elements

The tables below propose a set of indicators for each of the two policy instruments in OECD (2022_[1]). They are organised in sections following the structure described above. **The proposed indicators are not (and are not meant to be) exhaustive. The list and features can be verified when the policy instruments in question are actually implemented, i.e. when a monitoring and evaluation system is designed and implemented.**

For each type of indicator (column 1), the table reports:

- ✓ The name of the indicator (column 2), explaining its main features;
- ✓ The formula to calculate the indicator (column 3), and explaining the calculation;
- ✓ The demographical categories (column 4) for which the indicator can be calculated (each principal indicator is thus transformed into a series of sub-indicators);
- ✓ The source for the data on which the indicator is calculated (column 5), and in particular when the source of information is external to the Administration;
- ✓ The feasibility level (column 6), following the parameters set out in Section 2.3. The indicator is always considered feasible if the information can be requested in the application to the policy support and integrated into the Administration/policymaker's information system.

As specified above, the information needed to calculate some indicators should be collected at the start of the monitoring process, then iteratively during the lifecycle of the analysed policies. This can continue until data and information become available, that allow estimating the gross or net effects of the policies at the end or even some time after the end of the policy intervention.

3.1 Set of indicators: Investing in skills in business networks

A. Context	Name	Calculation	Possible categories	Source	Feasibility level
A1-	Pool of potential users of the instrument	No. of MSMEs	National / Macro-regional / Regional / Provincial Micro enterprises (fewer than 10 employees) / Small enterprises (fewer than 50 employees) / Medium enterprises (fewer than 250 employees)	ISTAT - ASIA (Statistical register of active enterprises) ISTAT database →Enterprises →Structure →Enterprises and staff →Main data Last year available: 2020 Notes: a filter makes it possible to include or exclude companies with zero employees. As well as offering free access to the database, ISTAT publishes a file of data tables containing various details on the structure of enterprises (source: ASIA). The latest update (Nov. 2021 on 2019 data) is here https://www.istat.it/it/archivio/263692	Feasible
A2-	Usability of the instrument	No. of networks already established at the launch of the policy	National / Macro-regional / Regional	Chamber of Commerce →Register of Enterprises https://www.infocamere.it/web/ic-home/accesso-alle-banche-dati Synthesis tables for these data can be sourced from InfoCamere. Only publicly-available indicator of interest: firms that have entered into a network contract, broken down by region https://contrattidirete.registroimpresa.it/reti/ <u>Sources of pre-elaborated data:</u> RetImpresa: - Dashboard (regional data on number of networks and number of networked enterprises, but lacking breakdown by size) https://www.retimpresa.it/red-reti-e-dati/#esplora - Annual publication of the National Observatory on Networks https://www.retimpresa.it/osservatorio/	Feasible
A3	Annual expenditure on intramural R&D	Thousands of euros at current prices	National / Macro-regional / Regional By class of worker	Istat, Statistical survey on research and development in enterprises	Feasible
A4	Annual expenditure on extramural R&D by type of external party	Thousands of euros at current prices	Dependent on Istat data release	Istat, Statistical survey on research and development in enterprises	Semi-feasible Non-public data

A5	Innovation intensity of the production system	Percentage of enterprises with innovative activities ² in the three-year reference period, out of the total number of enterprises with at least 10 employees	By class of worker By economic activity By age of enterprise By proportion of employees with a university degree	Istat and Eurostat, Statistical survey on research and development in enterprises (CIS-Community Innovation Survey)	Feasible
B. Programming	Name	Calculation	Possible categories	Source	Feasibility level
B1	Level of economic support available to intermediate bodies (IBs)	Resources involved / No. of IBs	Public/private nature Type of IB Geographical area of IBs	Administration's internal information system / person in charge of it	Feasible
B2	Average level of economic support for the provision of individual types of services	Resources allocated by type of service / No. of beneficiaries	Replicable for the four service types in the Recommendations	Administration's internal information system / person in charge of it	Feasible
C. Question	Name	Calculation	Possible categories	Source	Feasibility level
C1	Attractiveness of the instrument	No. of established or emerging networks requiring at least one service	Existing vs new networks Networks that requested multiple services Networks with service 'x' Network features (sector / geographical area / network size class , i.e. No. of partners)	Administration's internal information system / person in charge of it	Feasible
C2	Consistency	No. of networks approved for the service / No. of networks that applied for the service	Existing vs new networks Geographical location of the network Network size class	Administration's internal information system / person in charge of it	Feasible
D. Process	Name	Calculation	Possible categories	Source	Feasibility level
D1	Intermediate bodies (IBs) managing the delivery of the instrument	No. of IBs per specific characteristic / No. of total IBs	Public/private nature Type of IB Geographical area of IBs	Administration's internal information system / person in charge of it	Feasible
D2	Degree of organisational complexity of IBs	No. of IBs offering specialist technical support (lawyers, accountants, etc.) for the	Public/private nature Type of IB	Administration's internal information system / person in charge of it	Feasible

² Companies that have carried out activities aimed at introducing product or process innovations. These activities may have been successfully concluded with the introduction of product or process innovations at the end of the three-year period, may still be in progress at the end of the three-year period, or may have been started during the three-year period but were abandoned or temporarily discontinued during the same period. For the definition of innovative activity, refer to OECD (2018_[2]).

		promotion of the instrument	Geographical area of IBs		
D3	Speed of delivery of the instrument	Waiting time between network application and service delivery / Average waiting time across networks	Public/private nature Type of IB Geographical area of IBs	Administration's internal information system / person in charge of it	Feasible
D3	Level of interaction between IBs and the funding Administration	No. of meetings held during year 'x'	Public/private nature Type of IB Geographical area of IBs	Administration's internal information system / person in charge of it	Feasible
D4	Level of involvement of local actors	No. of local actors that the IB was able to mobilise to support the networks	Public/private nature Type of IB Geographical area of IBs	Intermediate bodies	Semi-feasible
D5	Withdrawal (cancellation) of funding	No. of withdrawals (cancellations) / No. of approved fundings	Geographical location of the network Network size class	Administration's internal information system / person in charge of it	Feasible
E. Output	Name	Calculation	Possible categories	Source	Feasibility level
E1	Saturation of demand	No. of established or emerging networks that have used the instrument	Existing vs new networks Geographical location of the network Network size class	Administration's internal information system / person in charge of it	Feasible
F. Result	Name	Calculation	Possible categories	Source	Feasibility level
G1	Level of effectiveness of the service provided	No. of networks that have implemented the provisions of the service	Existing vs new networks Geographical location of the network Network size class	Beneficiaries	New indicator measured on ad-hoc basis
G2	Increasing service coverage	No. of users / No. of eligible users *100. (No. of users T2 - No. of users T1) / No. of users T1* 100	Type of service provided Gender	Beneficiaries	New indicator measured on ad-hoc basis
G3	User satisfaction with the various characteristics of the service	No. of somewhat satisfied / No. of respondents	Type of service provided Gender	Beneficiaries	New indicator measured on ad-hoc basis
G. Outcome	Name	Calculation	Possible categories	Source	Feasibility level
G1	Increase in enterprise networks since the	No. of networks at the end of the intervention/No. of	Network size class Geographical location of	Beneficiaries	New indicator

	instrument was started	networks identified before the instrument was launched	the network		measured on ad-hoc basis
G2	Increase in skills at network member companies	No. of workers who feel they have improved their skills as a result of using the instruments / No. of workers in companies that received the investment	Type of service provided Gender	Beneficiaries	New indicator measured on ad-hoc basis
G3	Increase in levels of cooperation and trust between network member companies	No. of companies in the network that feel they have increased levels of cooperation and trust / No. of companies in the network	Network size class Geographical location of the network	Beneficiaries	New indicator measured on ad-hoc basis

3.2 Set of indicators: The *Voucher Consulenza Formazione*

A. Context	Name	Calculation	Possible categories	Source	Feasibility level
A1	Pool of potential users of the instrument	No. of MSMEs	National / Macro-regional / Regional / Provincial Micro enterprises (fewer than 10 employees) / Small enterprises (fewer than 50 employees) / Medium enterprises (fewer than 250 employees)	ISTAT - ASIA (Statistical register of active enterprises) ISTAT database →Enterprises →Structure →Enterprises and staff →Main data Last year available: 2020 Notes: a filter makes it possible to include or exclude companies with zero employees. As well as offering free browsing of the database, Istat publishes a file of data tables containing various information on the structure of enterprises (source: ASIA). The latest update (Nov. 2021 on 2019 data) is here https://www.istat.it/it/archivio/263692	Feasible
A2	Enterprises that have introduced innovations receiving public support for innovation	No. of enterprises with at least 10 employees that have introduced innovations and that receive public support for innovation ³	National Macro economic sector	Istat and Eurostat, Statistical survey on research and development in enterprises (CIS-Community Innovation Survey)	Feasible
A3	Companies with cooperation agreements for innovation	No. of companies with at least 10 employees with cooperation agreements for innovation	National / Macro-regional / Regional Location of partner and class of employees Economic sector Type of partner and class of employees	Istat and Eurostat, Statistical survey on research and development in enterprises (CIS-Community Innovation Survey)	Feasible
A4	Proportion of companies that organised training courses in the previous year to develop or update their ICT skills of their employees with specialised ICT skills	No. of companies with at least 10 employees that organised training courses in the previous year to develop or update the ICT skills of employees with specialised ICT skills / Total no. of companies with at least 10 employees.	Economic sector	Survey on information and communication technologies in enterprises	Feasible

³ The focus on enterprises with at least 10 employees is dictated by the data source, which does not cover micro-enterprises.

B. Programming	Name	Calculation	Possible categories	Source	Feasibility level
B1	Average value of the Voucher	Expected value of the Voucher / Level of designated resources (in total or possibly broken down into the two types)	Firm size class	Administration's internal information system / person in charge of it	Feasible
B2	Average value of the training preparation Voucher	Expected value of the Voucher / Level of designated resources (in total or possibly broken down into the two types)	Replicable for the four service types	Administration's internal information system / person in charge of it	Feasible
B3	Average value of the Voucher for training	Expected value of the Voucher / Level of designated resources (in total or possibly broken down into the two types)	Replicable for the four service types	Administration's internal information system / person in charge of it	Feasible
C. Question	Name	Calculation	Possible categories	Source	Feasibility level
C1	Attractiveness	No. of Vouchers applied for / No. of MSMEs that could be potentially interested	Voucher type National / Macro-regional / Regional Firm size class	Administration's internal information system / person in charge of it	Semi-feasible
C2	Maturity	No. of MSMEs that applied for a preparatory Voucher / No. of MSMEs that applied for a Voucher	National / Macro-regional / Regional Economic sector	Administration's internal information system / person in charge of it	Feasible
C3	Consistency	No. of approved applications / No. of applications	Voucher type National / Macro-regional / Regional Firm size class	Administration's internal information system / person in charge of it	Feasible
D. Process	Name	Calculation	Possible categories	Source	Feasibility level
D1	Speed of delivery of the instrument	Waiting time between network application and service delivery / Average waiting time	Voucher type National / Macro-regional / Regional Firm size class	Administration's internal information system / person in charge of it	Feasible
D2	Average cost of the Voucher	No. of issued Vouchers / disbursed Funds	Voucher type National / Macro-regional /	Administration's internal information system / person in charge of it	Feasible

			Regional Firm size class Economic sector		
D3	Average training hours provided	Total training hours provided / No. of issued vouchers	Voucher type National / Macro-regional / Regional Firm size class Economic sector	Administration's internal information system / person in charge of it	Feasible
D4	Withdrawal (cancellation) of the voucher	No. of withdrawals (cancellations) / No. of issued vouchers	Occupational profile of trainees Gender Training type Business type Economic sector	Administration's internal information system / person in charge of it	Feasible
E. Output	Name	Calculation	Possible categories	Source	Feasibility level
E1	Success of the instrument	No. of issued vouchers	Occupational profile of trainees Training type Business type Economic sector	Administration's internal information system / person in charge of it	Feasible
E2	Reach of training	Number of internal employees participating in courses / Total no. of employees	Occupational profile of trainees Gender Training type Business type Economic sector	Administration's internal information system / person in charge of it	Feasible
E3	Course attendance	No. of issued vouchers with more than 70% of the training hours utilised / No. of issued vouchers	Occupational profile of trainees Training type Business type Economic sector	Administration's internal information system / person in charge of it	Feasible
F. Result	Name	Calculation	Possible categories	Source	Feasibility level
F1	Satisfaction with skills	No. of positive feedback	Occupational profile of	Beneficiaries	New

	acquired on the course	questionnaires / No. of administered questionnaires	trainees Gender of participants Geographic area of participants Economic sector of participants' companies		indicator measured on ad-hoc basis
F2	Knowledge gained during the course	No. of retrained employees / No. of involved employees	Occupational profile of trainees Gender of participants Geographic area of participants Economic sector of participants' companies	Beneficiaries	New indicator measured on ad-hoc basis
G. Outcome	Name	Calculation	Possible categories	Source	Feasibility level
G1	Improvement in professional status (perception indicator)	No. of voucher users who consider their professional status improved as a result of the instrument / No. of issued vouchers	Occupational profile of trainees Participants' gender Participants' location Economic sector of participants' companies	Beneficiaries	New indicator measured on ad-hoc basis
G2	Improvement in income (objective indicator)	No. of voucher users who saw their income improve as a result of the instrument / No. of issued vouchers	Occupational profile of trainees Participants' gender Participants' location Economic sector of participants' companies	Beneficiaries	New indicator measured on ad-hoc basis
G3	Improvement in career progression (objective indicator)	No. of voucher users who saw their career improve as a result of the instrument / No. of issued vouchers	Occupational profile of trainees Participants' gender Participants' location Economic sector of participants' companies	Beneficiaries	New indicator measured on ad-hoc basis

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