Evaluation of Measure 3.3. of the Economic Competitiveness Operational Programme (ECOP) – *Reinforcement of corporate R&D capacities and innovation skills* (Hungary)

1. Introduction

Hungary has been eligible to use the resources of the Structural Funds since it joined the European Union in 2004. A National Development Plan was devised for the allocation of the funds channelled to Hungary during the first programming period between 2004 and 2006.

This case study presents a review of the external evaluation of the research and innovation components of Hungary's Economic Competitiveness Operational Programme (ECOP), which was one of five national programmes launched as part of the 2004-2006 National Development Plan. Priority 3 of the ECOP addressed research and innovation, and was designed to help Hungarian enterprises improve their innovativeness and thereby drive national competitiveness and economic growth. It comprise three distinct components, addressing young IP-based spinoffs, SMEs' innovation projects and larger businesses research infrastructure, which together provided more than €43 million in targeted support to more than 400 enterprises.

When the operational programmes for the National Development Plan were being designed, the Hungarian research and innovation system could be characterised as having low levels of business R&D expenditure and a relatively developed public-sector knowledge base. There was only very limited cooperation between the two sectors, and both the private sector was struggling with antiquated and arguably obsolete production equipment and research infrastructure. Therefore, the main components of Priority 3 were defined to address these particular problems in the corporate sector.

The evaluation was commissioned by the National Development Agency in Hungary and was carried out by an external contractor, KPMG Hungary. It was commissioned to determine the effectiveness and efficiency of the priority area, and the three components within this. The evaluation also had a formative goal too, inasmuch as it was designed to provide an input into the development of the enterprise-related research and innovation support measures for the 2011-2013 programming period, based on the experiences of the calls launched during 2004-2006.

The findings of the evaluation provided evidence for the Managing Authority and the intermediary bodies.

2. Description of the evaluated measure

ECOP support for research and innovation (Priority 3) comprised the following three components, each of which was addressed through the evaluation:

- Support of the innovation tasks of new technology and knowledge intensive microenterprises and spin-off companies (ECOP 3.3.1);
- Development of corporate research infrastructure related to the creation of new researcher workplaces (ECOP 3.3.2); and
- Promotion of enterprise innovation (ECOP 3.3.3).

Together the three measures were aimed at improving 'the competitiveness of the corporate sector through the development of corporate research and development potential and capability and innovative, technology-intensive activities by:

- Raising the quality of corporate research, supporting high value-added activities;
- Broadening the fields of corporate R&D activity and strengthening the adaptation and utilisation of R&D results at companies;
- Promoting innovative new enterprises and technology-intensive SMEs;
- And improving the quality of corporate research infrastructure.'[1]

The following table provides an overview of the characteristics of the three components evaluated.

Figure 1 Overview of the Evaluated Components

Name of the measure	ECOP 3.3.1 - Spin-off	ECOP 3.3.2 - R&D infrastructure	ECOP 3.3.3 - SME innovation	Total
Name of the programme	Economic Competitiveness Operational Programme (ECOP), National Development Plan			
Types of innovation support measures	Science industry cooperation	Direct financial support for R&D infrastructure investments	Direct financial support for research and innovation	N/A
Description of the measure	Supporting innovation at newly established technology- and knowledge-intensive micro-enterprises and spin-offs	Support was granted to develop research infrastructure at enterprises with the aim of creating new researcher workplaces	Support for the adoption, introduction and utilisation of new or improved products, processes and services at SMEs	N/A
Start-end date	2004-2005	2004-2005	2004-2006	N/A
Eligible participants	New, technology-intensive micro and small-sized enterprises, registered after 01/05/2000 or individuals fulfilling eligibility criteria[2]	Any enterprise registered in Hungary, without size restriction	Any microenterprises or SMEs registered in Hungary	N/A
Planned budget of the measure (€M)	€6.8M	€7.6M	€20M	€34.4M
Project proposals received **€M** **(Nr)**	€24.8M (318)	€5.7M (31)	€77.6M (679)	€108.1M (1,028)
Projects granted **€M** **(Nr)**	€11.2M (145)	€4.4M (21)	€27.3M (247)	€43M (413)

Source: Technopolis based on ECOP programme documentation.

3. Designing the evaluation study

3.1 The process of designing the terms of reference

All evaluations relating to Structural Funds are handled centrally by the Evaluation Division of the Coordinating Managing Authority in the National Development Agency. It develops, with the involvement of representatives of the other Managing Authorities (MAs), a rolling evaluation plan covering two consecutive years, which is updated annually. The plan covers evaluations that are considered to be important

[1] Economic Competitiveness Operational Programme, 2004-2006, Republic of Hungary, CCI No: 2003 HU 16 1 PO 002.

[2] Eligibility criteria: individual participants had to obtain official institutional declaration of the intention of creating a spin-of company

and timely for policy implementation. The evaluation unit coordinates and executes the evaluations with the engagement of relevant stakeholders.

In this case, the evaluation was announced in the evaluation plan and the detailed terms of reference (ToR) were developed subsequently through systematic consultation with all potentially interested stakeholders. While the Managing Authorities are usually most interested in issues about relevance and impact, intermediaries are generally keener on exploring issues about implementation and other topics of a more operational nature e.g. financial and accounting-related rules. The final evaluation specification therefore encompassed both effectiveness and efficiency objectives, reflecting the spectrum of stakeholders' interests. This was also well reflected in the evaluation questions defined by the terms of reference.

As a rule, the National Development Agency's evaluations tend to focus on a reasonably generic set of evaluation questions: relevance, effectiveness, efficiency, impacts and sustainability. Most studies combine a formative element with a summative analysis, requiring evaluators to judge a programme (or even a large project) on its measured performance (actual), and to draw out lessons as the basis for making recommendations for improving the effectiveness of future interventions.

Interviewees stated that presently in Hungary there are no significant differences in the evaluation of innovation support measures as compared with the evaluation of other policy areas e.g. infrastructure development. Both the evaluation questions and the methods specified tend to be rather generic. This may be explained by the fact that Hungary does not have a long tradition in the evaluation of innovation support measures and has therefore followed the approach set out in more general guidance on evaluation, including for example the advice from structural funds. It is also perhaps a reflection of the historical focus on coherence and programming rates. However, we would expect this situation to change in the future as evaluators and institutions place greater emphasis on measuring programme outcomes and also acquire more insight about the particularities of different types of policy intervention. The ECOP research and innovation evaluation is arguably moving in this direction inasmuch as its review of effectiveness attempted to quantify the net effects on participating enterprises' innovativeness, growth and competitiveness as compared with the performance of non-participating companies.

3.2 Key elements of the ToR

The terms of reference for the Evaluation of the ECOP 3.3 Measure were set out in a comprehensive document, running to 14 pages and comprising numerous chapters and annexes. They also included several embedded files with samples and descriptions of the databases to be used for the study purposes.

The study was commissioned through a Framework Contract that entails competition among a small panel of pre-qualified consultants. Evaluators were not required to submit detailed proposals for the tender specification, as preliminary methodological issues and procedures were already assessed during the selection phase of the framework contract. As such, there is a preference for issuing detailed and closely specified terms of reference, inviting applicants to compete on price rather than on methodology. This prescriptive approach has its advantages as it greatly simplifies the evaluation of tenders, however on the downside, it can be challenging for clients, with limited specialist internal capacity, to develop comprehensive and robust study designs. Moreover, there is always the possibility that a more open call for proposals would attract a more robust or better value solution. That said, the market for evaluation in Hungary is small and the supply side is also quite small as a result and is still developing its competences. A more prescriptive approach is understandable in an emerging market. Notwithstanding this last remark, many clients prefer to follow a slightly more open approach than that seen here, inviting some level of competition on both approach and price, even within these sorts of framework contracts and consultant panels.

While the ToR is comprehensive, it is somewhat clumsily drafted and a tough read, which reflects the scope of the brief – 13 groups of evaluation questions – and the limited experience on the client side. The evaluation questions comprise a mixture of high-level, overarching questions and very specific sub-questions targeting details of the individual measures, which creates the impression of a lack of strategic thinking and harmonisation of the questions raised by the different interested parties when assembling the evaluation questions and the specification.

Ultimately, however, the ToR poses all of the classic evaluation questions concerning relevance, effectiveness and efficiency, and prescribes appropriate data collection and analytical strategies for all of the requirements.

The ToR are presented below for reference in a heavily abridged form:

1. **Introduction to the evaluation**: describing the policy context of the evaluation and defining the main evaluation issues:
   - What type of effects did the measures have on corporate goals and profitability? (Econometric impact assessment)
   - Was the programme adequate? (Assessment of the appropriateness of the measures based on the perceptions of stakeholders: did the measures address needs in the most effective and efficient way?)
   - Have there been any changes during the programme's implementation?
2. The **objective** of the evaluation and the **measures to be evaluated**
3. **Data sources:** A long list of information sources, including relevant national (e.g. the ex-ante and mid-term evaluations of ECOP) and international studies (e.g. EU Innovation Scoreboard indicators) were suggested to be reviewed - compulsory or indicative literature - as part of the desk research and the international policy benchmark exercise
4. **Data collection methods:** the evaluators were required to carry out
   - Desk research to analyse key documents, programme databases, national enterprise databases and international statistics (indicators)
   - Separate online surveys addressing all beneficiaries and unsuccessful applicants, using linked but different sets of questions
   - Personal interviews with beneficiaries, representing a cross-section of participants from each of the three strands
   - An econometric impact assessment. Additional econometric analysis was requested with the aim to reveal the direct and indirect effects of the measures on the beneficiary and wider stakeholder groups. The econometric analysis was based on a database that was built by using a large number of enterprise performance-related indicators
5. **Description of the databases on enterprise performance**: the evaluators were granted access to a database (anonymous) held by the Hungarian tax authority with relevant information on the grants allocated. Furthermore, there are publicly available databases containing balance sheet information about companies. Examples of the databases (i.e. headings and categories of the available data for evaluation purposes) were provided in the form of embedded spreadsheets in the specification
6. **Requirements regarding the methodology of the evaluation**: the section discussed the available data and the required evaluation methods (desk research, including document and literature review, descriptive statistics, analysis of the interview programme and online survey results and econometric impact assessment) to address the main evaluation issues and their timing, as well as the order in which the tasks should be implemented.

The scope of the work appears quite reasonable, with a 250-person day budget and 6-month timetable set against a need to investigate a long list of evaluation questions relating to a €43 million programme spend (for the three components together) and a 3-year term. In practice, the econometric work proved to be rather more demanding than the client or evaluator had anticipated, however most of the financial and other consequences of that under-specification were absorbed by the sub-contractor carrying out the specialist economic analysis.

4. Implementing the evaluation: methodology and process

4.1 The approach and methodology

Based on the specification, the evaluation used a mixture of data collection and analysis methods to address the 13 evaluation issues.

The specification defined the expected methodologies and the evidence base, issue by issue. The study design is entirely appropriate to the task at hand, evaluating the relevance, effectiveness and efficiency of the three sub-programmes, and combined desk research (e.g. secondary data from programme documents and the monitoring system) with comprehensive primary data obtained through surveys of applicants and beneficiaries on the one hand and semi-structured interviews with stakeholders on the other. The secondary data provided the baseline and reference statistics, while the surveys were used to profile beneficiaries (to inform the matching process for the counterfactual analysis) and to dimension applicants' views on each of the principal evaluation questions, while the 15 follow-up interviews with beneficiaries were used to explore the emerging findings. The econometrics analysis was used to estimate the counterfactual, permitting the study team to adjust the estimate (based on self-assessment through the survey) of economic benefits attributable to the innovation support and discounting this gross effect – producing a net effect – by looking at the experience (employment and sales growth) of unsuccessful applicants in the first instance and at a matched sample of non-applicants in a second round of the analysis.

Based on the requirements and guidance set by the terms of reference, the evaluators carried out the following tasks:

- Literature review and descriptive statistics based on relevant documents (e.g. programme documentation and policy benchmark documents), literature including previous evaluations of the measure and data sources. The key reference documents were listed in the specification;
- Database analysis that comprised monitoring data extracted from the monitoring database of the intermediary bodies and received from the Hungarian tax authority, in addition to national and international statistics. The database analysis together with the literature review were aimed at describing the policy context of the ECOP components and the presenting key statistics on the individual components;
- Online questionnaires were launched to survey the beneficiaries of the three components and the non-successful applicants. The questionnaires were sent out to 1,028 project applicants, out of which the study team received 238 completed responses (147 from beneficiaries and 91 from non-successful applicants) which represents an overall response rate of 23%;
- In total 15 in-depth, face-to-face interviews and focus-group discussions were conducted to reveal additional, more qualitative information regarding participant experience, the impact of the projects and to verify the results gained from the online surveys. In addition, to gain a comprehensive understanding of the programme design, programme and project management procedures, the evaluators also interviewed representatives of the programme management and the intermediary bodies; and

- The econometric impact analysis formed a crucial part of the evaluation. Each of the three components was assessed in two different ways:

  (1) A paired comparison model was used to compare the net impacts between applicants (successful and unsuccessful) and non-applicants. The control group of non-applicants was matched against the profile or characteristics of applicant businesses using statistics received from the national tax authorities (taken from company accounts).

  (2) An unpaired comparison model was used to compare successful and unsuccessful project applicants, and to test the sensitivity of the results in these two populations. The groups were tested on a number of size-related and financial features, and a regression analysis was carried out on a large number of variables (turnover, employment, R&D expenditure, subsidies, immaterial goods, capital expenditure, exports, etc).

The above-described methodology was combined to address the evaluation issues. The following table provides an overview of the combination of the evaluation methods in addressing the evaluation issues and question groups.