



GPEARI

Gabinete de Planeamento, Estratégia, Avaliação e Relações Internacionais
Ministério da Ciência, Tecnologia e Ensino Superior

Measuring R&D expenditure and Human Resources in the private sector

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Summary

- ◆ Brief description of R&D survey
- ◆ Critical Issues and Best Practices (CI & BP)
- ◆ Main conclusions

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R&D survey in Portugal

- ♦ It was executed every two years since 1982 until 2007;
- ♦ From 2008 reference year, this questionnaire will be carried out every single year



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R&D survey (BES)

Main indicators:

1. R&D expenditure by:

- Type of costs and type of R&D;
- Sources of funds (breakdown of BERD funded from national sources and from abroad);
- FOS (Fields Of Science);
- SEO (Socio-Economics Objectives).

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R&D survey (BES)

2. Human resources (headcount and FTE) by:

- Occupation;
- Qualification;
- Gender.

(Includes all personnel performing R&D activities in the firm: internal personnel and from other firms/institutions)

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R&D survey (BES)

- Census survey
- Target population:
 - all the **firms** (public and private) which potentially perform R&D, including:



All NACES



All size-classes

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R&D survey (BES)

- ◆ Main form:
 - Responses rate: 74%
- ◆ Individual form:
 - Is compulsory for the Gov. Sector, HES and PNPS, but it is optional for the BES.
 - Responses rate: 60%

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R&D survey (BES): Individual form

- ◆ The individual form collects the following data:
 - Gender;
 - Birth date;
 - Country of nationality;
 - Country of birth;
 - Academic degree (Field Of Science);
 - Percentage of time spent in R&D activities;
 - Field Of Science of R&D activities;
 - Socio-professional situation.

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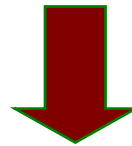
R&D survey (BES): Individual form

Advantages: (e.g.) allows to identify the variability of the nationalities of the researchers.

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Critical Issues and Best Practices (CI & BP)

- ♦ Misunderstand of the purpose of the survey;
- ♦ Difficulty to understand the meaning of the concepts about R&D activities. In particular to identify borderline cases between the R&D activities and others;
- ♦ The inexistence of analytical accountancy systems in the firms which difficult the report of current expenditure with R&D activities;
- ♦ Timeliness



- ♦ *e.form*
- ♦ Higher interaction

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CI & BP: *e.form*

In Portugal the *e.form* is used since 2001

- Returns pre-filled information (avoiding the overburden of the respondents);
- Includes help tools (e.g. concepts and examples of R&D activities);
- Information Management System (real time):
 - i) statistics about answers;
 - ii) checking each answer;
 - iii) recording the contacts with firms

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CI & BP: *e.form*

Advantages:

- Increasing the quality of the data:
 - i) Allows answer validation in real time (e.g. returning error messages and identifying compulsory questions);
 - ii) Reduces the errors with type data.
- Reduces the costs with communications and time consuming.

CI & BP: *Higher interaction*

- ◆ In order to have better information on R&D activities, independent experts (Certified Financial Auditors) were contracted to assist and help the 200 main firms.
- ◆ The main objective of this activity was to show the importance of the R&D survey and to support the firms in the way they report R&D expenditures.

CI & BP: *Higher interaction*

- ◆ Within the firm, the person or department that received the survey doesn't have all the information required to fill-in the questionnaire.
- ◆ The solution adopted was to send the letter, requesting an answer from the person on top of the firm.

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CI & BP: *Higher interaction*

- ♦ The work of the Certified Financial Auditors was strongly supported by the firms
- ♦ The work of the Certified Financial Auditors:
 - 1) allows the firms to have a better understanding of the purpose of the questionnaire;
 - 2) helps the firms to report in a correct way the R&D activities (expenditure and human resources)

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Conclusions (1)

For our Office the experience shared with the Certified Financial Auditors created added value since we obtained a real diagnostic about critical issues of the survey and harmonized results.

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Conclusions (2)

This experience discloses a crucial element in what concerns the level of confidence about the results. The report of the firms selected for this project, that declared R&D activities, represents 52% of the total amount of the expenditure and 40% of the total researchers (FTE).

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Conclusions (3)

Finally, considering the positive work of the Certified Financial Auditors performed during the previous R&D survey, we intend to continue working with these specialized services and also to **enlarge to the hospitals and health related services**, in the national R&D 2008 survey.

Thank you for your attention!

Questions / Remarks

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