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# Knowledge Economy Indicators: Development of Innovative and Reliable Indicator Systems

## Reporting

### Project Information

**KEI**

Grant agreement ID: 502529

[Project website](#) 

Project closed

**Start date**

1 September 2004

**End date**

28 February 2007

**Funded under**

Policy support: Specific activities covering wider field of research under the Focusing and Integrating Community Research programme 2002-2006.

**Total cost**

€ 2 140 356,00

**EU contribution**

€ 1 576 878,00

**Coordinated by**

EBERHARD - KARLS

UNIVERSITAET TUEBINGEN



Germany

## Final Report Summary - KEI (Knowledge Economy Indicators: Development of Innovative and Reliable Indicator Systems)

The project's aim was to develop and improve indicators for the knowledge economy, including the analysis of aggregation issues and the use of composite indicators. The project has covered indicators

from 25 European countries (the EU-25) and two non-European countries (the United States and Japan).

The KEI project has reviewed existing concepts and definitions of the knowledge-based economy and its key components. Further, it has developed main thematic areas in relation to the Lisbon and Barcelona objectives. KEI has then used these themes to classify existing indicators and thoroughly explore data and indicator quality issues. Gaps have been identified and the way forward has been mapped, identifying innovative approaches to improve our understanding and appraisal of the knowledge economy.

Composite indicators have been analysed in detail using both statistical and participatory approaches, including the use of multi-criteria methods, aggregation and weighting techniques, decomposition methods, and an evaluation of analytical and presentational techniques. Simulation methods have been employed extensively to investigate the robustness of indicators and the conclusions based on them. The study has evaluated the quality and accuracy of indicators and the underlying data and has assessed the innovative use of additional information to improve indicator quality.

The results show that it is possible to improve the information on globalisation of research and development (R&D) by integrating the aspect of measuring outward R&D in several ways to existing statistics. A lot of experience is already available in countries and it is now an issue on further harmonisation of the data. It is possible to develop a simple survey instrument to be used in connection with the R&D survey to collect information on outward R&D. Maybe it could also be possible to only add some questions on outward R&D in existing R&D surveys. This can be done for both R&D expenditures and personnel. Some details about country or country group breakdowns and some simple questions on reasons for having R&D abroad could also be included.

A matching between the company data of the EU R&D investment scoreboard and the corresponding company data from the R&D surveys is also feasible and can be done with rather limited resources (a few days work). This does not give the same result as the survey, but gives indication of the order of magnitude. Only outward R&D expenditures can be estimated in that way. Neither breakdown by country or motives for globalisation is possible to be evaluated.

Both for information on outward and inward R&D, it is very important to ensure the quality of the information on ownership. Multiple sources for information on the UBO ownership including special questions in surveys could be used to check the information. As the activities of the multinational companies are becoming more and more global and a split of activities between various countries will be more and more difficult, perhaps in the future data collection on R&D and other variables will be on the group level, and less on the enterprise level, which is now the standard practise.

Some exploratory work in that direction has already started in a joint ECE, OECD and EU project lead by Statistics Canada. The EU plans to establish a register over enterprise groups in EU also contributes to this.

Indicators on the globalisation of R&D is a new field, which need development within the next years. It is important to know how globalisation is influencing our knowledge-based economies.

## Related documents



Final Report - KEI (Knowledge Economy Indicators: Development of Innovative and Reliable Indicator Systems)

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