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COINVEST: Competitiveness, Innovation and Intangible Investment in Europe

Measuring Investment in Intangibles
Joint Conference by COINVEST and the OECD
2nd June 2009, Paris

Results from Portugal

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Grant No 217512*

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Data

Type of intangible investment (Million Euros)	2003		2004		2005	
	Value	%	Value	%	Value	%
Computer software	1169.95	0.84	1179.07	0.82	1232.61	0.83
Computerised databases	6.19	0.00	11.73	0.01	11.03	0.01
Scientific R&D	1445.10	1.04	1552.70	1.08	1697.90	1.14
Mineral exploration	699.96	0.51	570.69	0.40	344.88	0.23
Copyright and license costs	2124.00	1.53	1928.06	1.34	1970.33	1.32
New product development costs in the financial industry	1430.56	1.03	1446.09	1.00	1332.24	0.89
New architectural and engineering designs	764.99	0.55	753.53	0.52	748.86	0.50
R&D in social science and humanities (on the Scientific R&D)	0.00	0.00	0.00	0.00	0.00	0.00
Advertising expenditure	1363.83	0.98	1521.18	1.06	1658.83	1.11
Market research	117.67	0.08	142.51	0.10	154.21	0.10
Firm-specific human capital	833.41	0.60	861.74	0.60	887.7725	0.60
Organizational structure purchased	884.68	0.64	1229.67	0.85	2372.14	1.59
Organizational structure own account	31.19	0.02	34.18	0.02	39.14	0.03
Total	10871.52	7.84	11231.16	7.79	12449.94	8.35
GDP	138582.1	100.00	144128	100.00	149123.4	100.00

Table 1: Spending on Intangible Assets in the Market Sector (% GDP)

Type of Expenditure	Germany 2004	France 2004	Italy 2004	Spain 2004	UK 2004	PT 2004	US 1998- 2000
1. Computerized information	0.71	1.31	0.66	0.74	1.70	0.83	1.65
a) Software	0.69	1.27	0.66	0.72		0.82	
b) Databases	0.02	0.04	0.01	0.03		0.01	
2. Innovative property	3.47	3.12	2.26	2.51	3.23	4.34	4.57
a) R&D, including social sciences and humanities	1.69	1.32	0.52	0.55	1.09	1.08	2.06
b) Mineral exploration and evaluation	0.00	0.02	0.04	0.04	0.04	0.40	0.19
c) Copyright and license costs	0.20	0.32	0.10	0.19	0.21	1.34	0.81
d) Development costs in financial industry	0.70	0.58	0.79	0.35	0.69	1.00	0.79
e) New architectural and engineering designs	0.87	0.88	0.80	1.38	1.2	0.52	0.73
3. Economic competencies	3.27	5.22	2.67	2.19	5.95	2.63	6.91
a) Brand equity	0.84	1.51	1.19	0.58	1.59	1.16	2.53
Advertising expenditure	0.69	1.24	0.91	0.33	1.2	1.06	2.33
Market research	0.15	0.27	0.28	0.25	0.39	0.10	0.2
b) Firm-specific human capital	1.34	1.51	1.00	0.83	2.45	0.60	1.25
Continuing vocational training	0.67	1.25	0.69	0.73		0.60	
Apprentice training	0.67	0.26	0.31	0.11		-	
c) Organizational structure	1.09	2.21	0.48	0.78	1.92	0.87	3.13
Purchased	0.50	0.31	0.11	0.25	0.6	0.85	0.87
Own account	0.59	1.90	0.37	0.53	1.31	0.02	2.26



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Quadros de Pessoa

Matched employer-employee data

- The Quadros de Pessoa Database is a longitudinal matched employer-employee micro-data set covering all business units with at least one wage-earner in the Portuguese economy, including extensive information on firms, establishments, business owners and employees from 1986 to 2007
- Firms, establishments and individuals are fully cross-referenced through the use of a unique identification number, thus allowing for the recognition of entry and exit of firms and plants, as well as tracing the mobility of workers and business owners across firms and establishments over time
- Data on firms include size (employment), age, location, industry and number of establishments; data on business owners and employees include gender, age, hierarchical level, tenure, and schooling



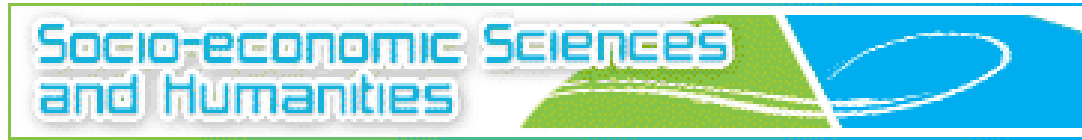
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The Matched Employer-employee Data

Overview of the main variables and dimensions of analysis

- *Identifiers*
 - Year
 - Identifier of the individual
 - Identifier of the firm
- *Individuals' demographics*
 - Gender
 - Age
 - Date of birth
 - Nationality
 - Schooling
- *Individuals' occupational status*
 - Occupation (6 digit)
 - Job level
 - Date of admittance in the firm
 - Date of the last promotion
 - Type of contract
 - Partial /full time work
- *Earnings and working hours*
 - Earnings – Regular, Irregular, Extra
 - No. of hours worked , regular, extra
- *Demography of firms*
 - Number of employees
 - Number of establishments
 - Establishing year
 - NACE code (6 digit)
- *Firm Location*
 - Parish, Municipality; District;
 - Regions: NUTS III
- *Financial indicators and type of ownership*
 - Sales volumes (Euros)
 - Initial capital (Euros)
 - Legal type of business

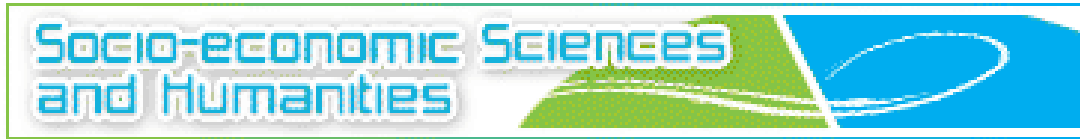


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Community Innovation Survey (CIS)

- Guiding principles of the Oslo Innovation Manual and executed under the supervision of Eurostat
- Deals directly with heads of R&D departments or innovation management
- Looks at innovation in a broad perspective, and not only at the adoption of one specific technological innovation, R&D expenditures or patents
- Firm-level matching information on innovation behaviour, and other firm's characteristics (match with firm accounts?)
- Manufacturing sector and some selected service sectors (including financial industry)



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Computerized Information

Computer software

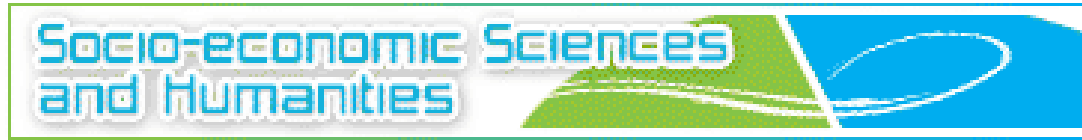
EUKLEMS database

Includes own use, purchased and custom software

Portuguese methodology equal to UK methodology

Computerized databases

Quadros de Pessoal Database - Turnover from the Database Management sector (NACE K72400)



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Innovative Property (I)

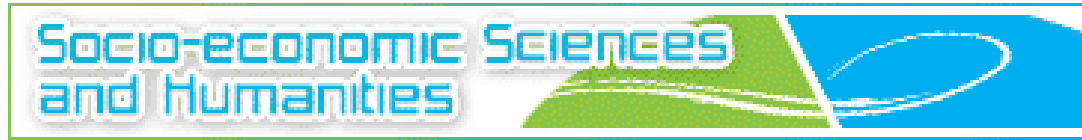
Scientific R&D

BERD (OECD - Main Science and Technology Indicators 2008-2)

Mineral exploration

Quadros de Pessoal database - Turnover from the mineral exploration industry (NACE 10 to 14 excluding “Services associated to oil and gas extraction not related to prospection” and “Salt refinement”)

National Accounts – consistency check when available



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Innovative Property

(Other product development, design and research)

Copyright and license costs

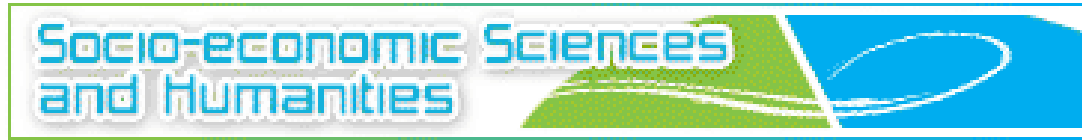
Quadros de Pessoal database - Turnover from the TV and radio, publishing, music industries, acting activities, reproduction of recorded sounds or videos (?)

National Accounts – consistency check when available

New product development costs in the financial industry

Quadros de Pessoal database - Turnover from the financial industry *
share of innovation expenditures of the financial industry obtained from the CIS III (4%) (update with CIS IV)

National Accounts and other waves of the CIS – consistency check when available



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Innovative Property

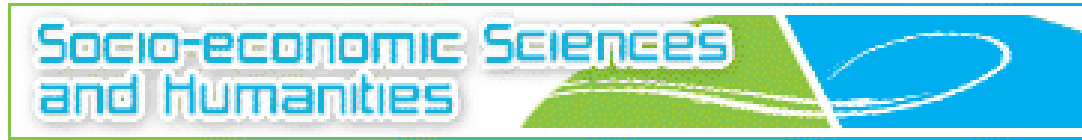
(Other product development, design and research)

New architectural and engineering design

Quadros de Pessoa – 50% of the turnover from the architectural and engineering industry plus the earnings from designers in other industries

R&D in social science and humanities

Included in the scientific R&D



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Economic competencies

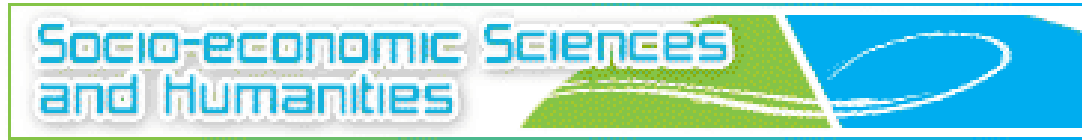
(Brand equity)

Advertising expenditure

Quadros de Pessoal - turnover from the advertising industry
(NACE 744)

Market research

Quadros de Pessoal - turnover from the market research industry



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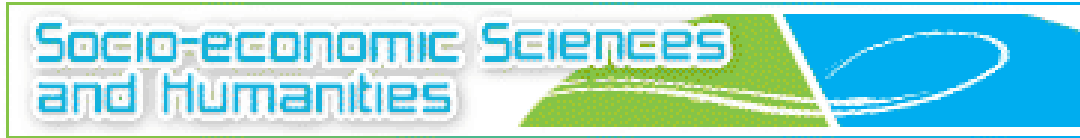
Economic competencies

(Brand equity)

Firm-specific human capital

Compensation of employees (EU Klems) * Percentage of training costs obtained from the Eurostat Vocational Training Survey (1999 value)

(Add apprentice training costs from the Labor Cost Survey)



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Economic competencies

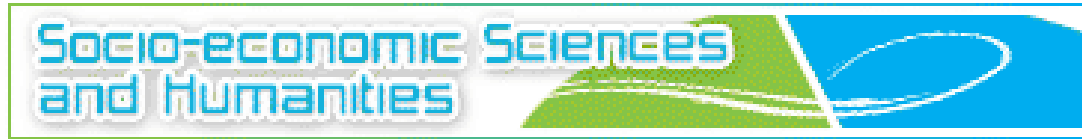
(Organizational structure)

Purchased

Quadros de Pessoal - Turnover from the management consulting industry

Own Account

Quadros de Pessoal – 20% of managers' earnings



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Issues

Databases Availability / Sources

National Accounts are not yet available with full detail

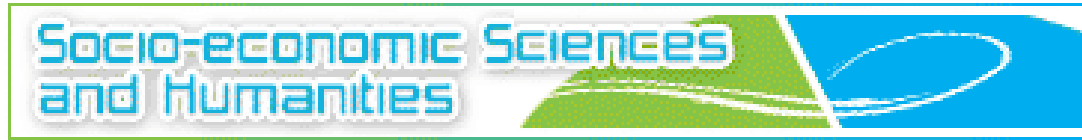
Matched employer-employee / CIS + firms accounts / ICT + firm accounts

(PT) NACE rev 1 vs NACE rev2

The correspondence between the two revisions of the codes are one bi-univocal

Tangible fraction of specific sectors

Percentages for financial industry, firm specific human capital and organizational structure may be revised

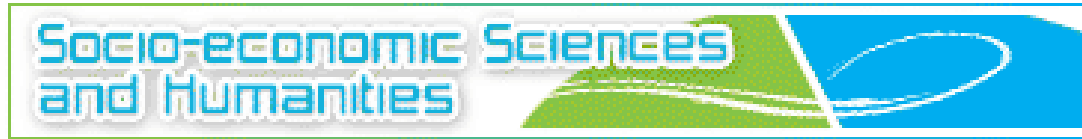


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Micro Analyses

- Interdependence and Spillovers: Is Firm Performance Affected by Others' Innovation Activities?
- Firm Decision on Innovation Types: Evidence on Product, Process and Organizational Innovation
- Cooperation Innovation Activities: The Importance of Partners
- Formal and Strategic Appropriability Strategies of Multinational Firms – a cross country comparison (in cooperation with German researchers)
- Knowledge Protection Capabilities and their Effects on Knowledge Creation and Exploitation in High- and Low-tech Environments (in cooperation with German researchers)



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Mid-Term Review Meeting

2nd and 3rd June 2009

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