

A Contribution to the Debate on International R&D Cooperation Policies in Europe: An evaluation of Spain's Participation in the Eureka Initiative

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Structure

- 1. Motivations & Literature Review**
- 2. The Eureka Programme**
- 3. Research Questions**
- 4. Sample Description**
- 5. Methodology**
- 6. Preliminary Results**
- 7. Implications & Limitations**
- 8. Where we stand – future developments**



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Background

- Increasingly relevant role of technological and scientific *international* cooperation (Edler, 2010; Veugelers, 1998; López, 2008; Archibugi & Iammarino, 1999)
- Firms adapting to new environments (Pavitt, 2002; Hagedoorn, 2002; Narula, 2001; 2004; Zeng, Xie & Tam, 2010; Barajas & Huergo, 2006; Katz & Martin, 1997; Jonkers & Castro, 2010; Katz, 1986; Chesbrough, 2003)
 - Shortened innovation cycles
 - More specialized organizations/More interdisciplinary knowledge
 - Internalizing *spillovers*
 - Open Innovation
 - “Larger” Europe



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Background

- Initiatives were created to foster what *agents* were already doing
 - FPs
 - Eureka
- The need for evaluation (Laranja, Uyarra & Flanagan, 2007; Metcalfe & Georghiou, 1997; Durieux and Fayl, 1997 among others).
 - Improvements
 - Evolution
 - Adaption
 - Ever changing economic, political, technological, social (and a large *et cetera*) environments



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Eureka

- Aims at enhancing collaboration between companies in a market oriented, non-bureaucratic, bottom-up approach promoting cooperative projects for national funding
- Present in 38 countries
- No financial support - seal of approval that facilitates access to governmental funds
- Internal evaluation system
- Several academic assessments



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Where?

- Why Spain?
 - One of the most active participants throughout Europe
 - Established funding scheme – CDTI
 - Internationalization of innovative activities shall be strategic for agents located at a *laggard* IS (COTEC, 2007; Fernández, Junquera & Vázquez, 1996).
- Why firms?
 - Near to the market initiative
 - Market impact



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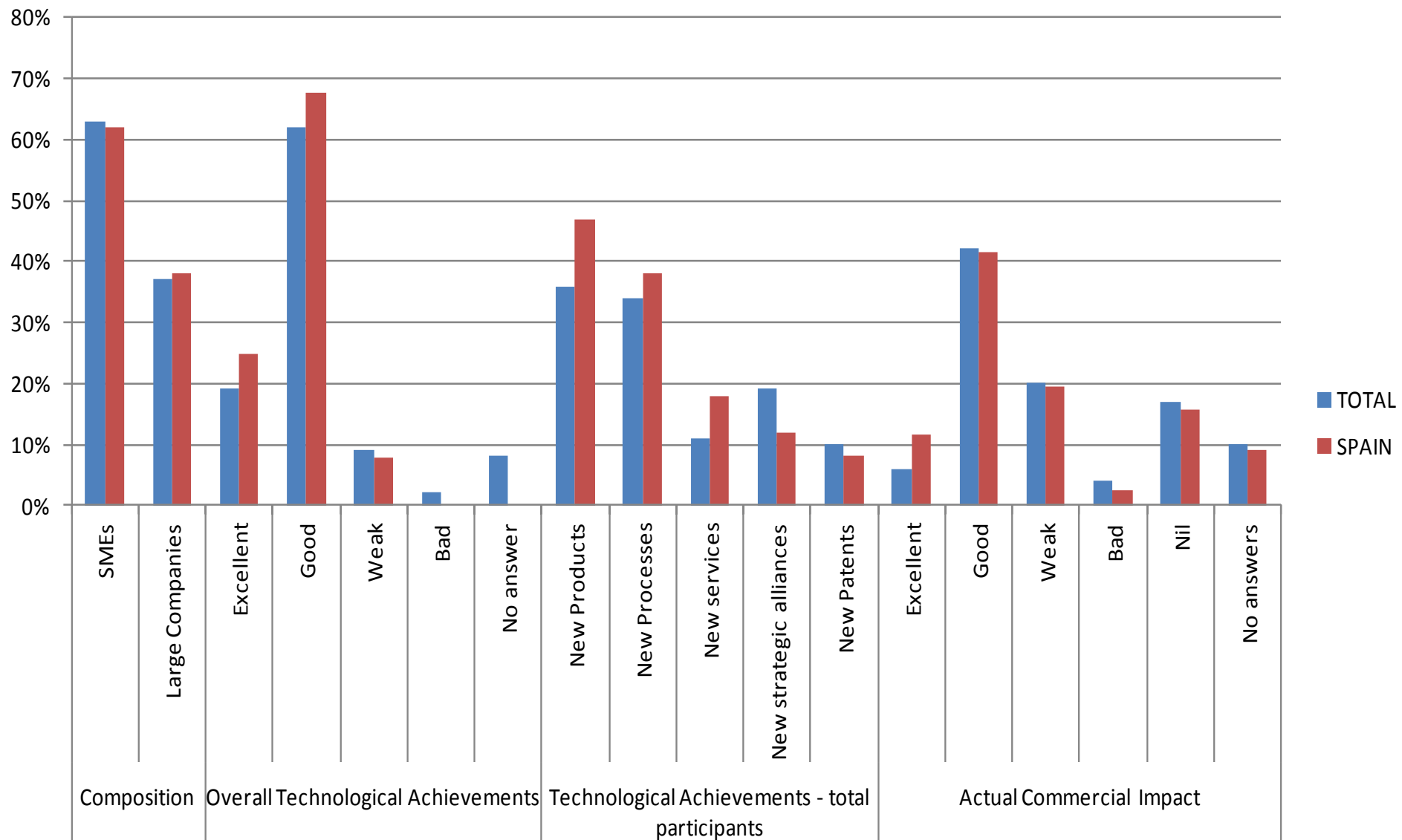
Research Questions

- Current
 - What are the Impacts of Eureka according to ***THE PERCEPTION*** of Spanish participants?
 - Technological
 - Commercial
- Future
 - What are the Impacts of Eureka according to ~~***THE PERCEPTION***~~ of in Spanish participants?



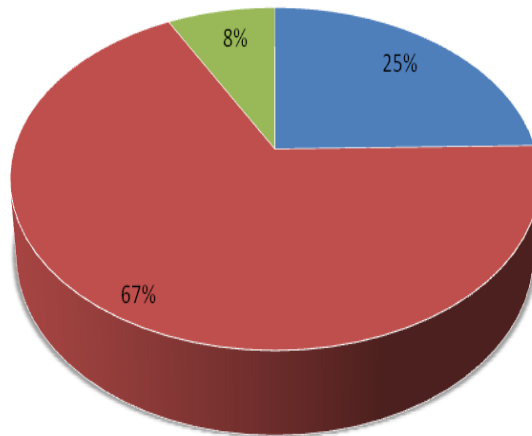
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Sample 2000-2005



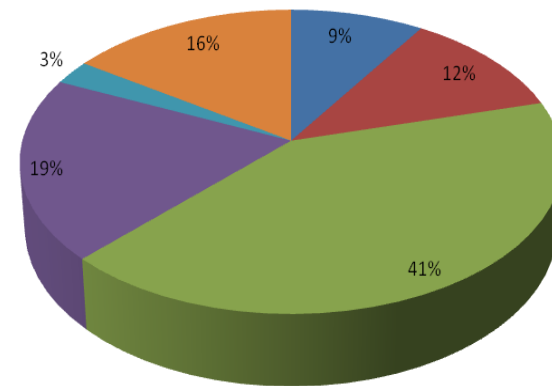
Sample 2000-2005

Overall Technological Achievements



- Excellent
- Good
- Weak

Commercial Achievements



- No answer
- Excellent
- Good
- Weak
- Bad
- Nil

N=77



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Methodological Approach 1

- TwoStep Cluster
 - Test for K means
 - Schwarz's Bayesian Criterion (BIC) Changes was the test used for establishing the optimal number of clusters for the sample.
 - Chi-square tests for the classification relevance of variables were also performed.
 - Variables: *Companies' Size, Role in the Project, Functioning of the Project, Overall Technological Achievements, Industrial Exploitation by the Respondent's Company, Product Already on the Market and Commercial Achievements.*
 - Cross-tabs were used to explore associations



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Results – 2000-2005

- **Suggested Clusters**

- **1. *Risky Innovators* (28)**- Companies comprehended in it have the best technical outcomes out of the three clusters, but only partially they can obtain satisfactory market results.
- **2. *Inventors* (26)** - These companies are classified as inventors for showing fair technical results without taking advantage of it in the market – which does not allow us to define them as innovators per se.
- **3. *Consistent Innovators* (23)** - These companies have poorer technical results than the risky innovators, but consistently achieve good commercial results.



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N=77

Methodological Approach 2

- Merging 2000-2005 and 2006-2008 datasets
- Definition of Technological and Commercial *failure & success*
 - *Issues for Commercial Achievements scale*
 - *Would you think the quality of functioning of a collaborative project is important for its outcomes?*
- Logit regressions

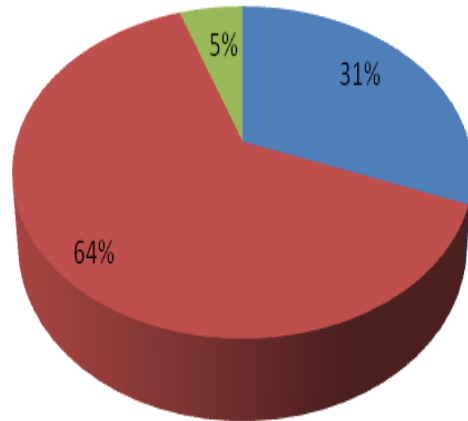


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Sample 2000-2008

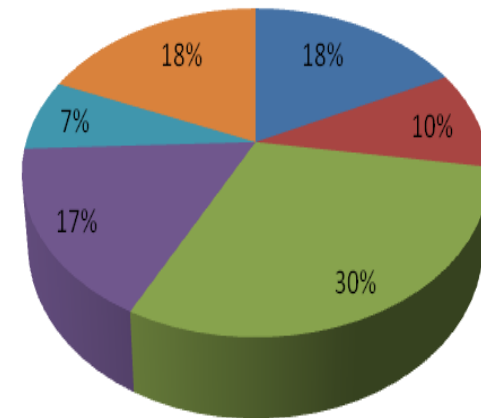
Technological Achievements

■ Excellent ■ Good ■ Weak



Commercial Achievements

■ NA ■ Excellent ■ Good ■ Weak ■ Bad ■ Nil



N=113



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Logit Models

- **Technological Achievements**

H1: Technological results achieved through companies' participation in an International R&D Collaboration project are determined by firms' inherent characteristics (size, duration of the project, cost of the project, status of participation in the project, geographical location).

$$\text{TECHACHIEV} = f(\text{Size}; \text{TotCost}; \text{Dur}; \text{Geo}; \text{R\&Dint})$$

- **Commercial Achievements**

H2: Commercial Achievements are partially determined by firms' characteristics, but the main driver in this case is the marketability of technical outcomes from the project.

$$\text{COMMACHIEV} = f(\text{Size}; \text{TotCost}; \text{Dur}; \text{Geo}; \text{R\&Dint}; \text{TECHACHIEV}; \text{IndExp}; \text{ALRD})$$



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Results

	Tech Achievements	Commercial Achievements
Size	-.244 (.804)	0.575 (.339)
TOT_COST_Project	.207 (.620)	.000 (.999)
DURATION_per_months	.049 (.280)	.005 (.780)
GEODUMMY	.767 (.410)	.604 (.331)
RATIO_RD_TURNOVER	.522 (.431)	-.627 (.124)
TECH_ACHIEV_GROUPS	-	20.237 (.999)
IND_EXP	-	2.015 (.071)
ALREADY_ON	-	1.294 (.025)
Constante	-.576 (.776)	-22.564 (.999)
Pseudo R sq. Nagelkerke	.101	.384



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Implications and Future Research

- Clusters might indicate interesting profiles for policymakers
 - *The goal is to promote what kind of innovative activity?*
- Dynamic Indicators
- Logit models highlight the obvious, but...
 - *Innovation is an uncertain process – how to achieve better results without declining the quality of projects (Georghiou, 2001)?*
- Do Final Reports assess outcomes in an objective manner?
 - *Reports' change over time – Functioning of Projects*
 - *Future Impacts*
 - *The need for objective indicators*
 - *“Double” self-selection issue – Eureka participants + FRs respondents*



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Implications and Future Research

- Use of CIS data (aggregated level)
 - Where does Spain stand in international context? What does it get from R&D collaboration?
- Establish hypotheses
- Simultaneous Equations (Crépon, Duguet & Mairesse, 1998; Bogliacino & Pianta, 2010; Colombo & Garrone, 1996).
 - *Indirect impacts of collaboration in performance via innovative output*
 - *Mirror sample (national collaboration projects) – do foreign ISs contribute more?*
 - *Working on the dataset*



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Thank you!

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