



13th International Conference on Industrial
Engineering and Industrial Management

XXIII Congreso de Ingeniería de Organización



**Organizational
Engineering
in Industry 4.0**

BOOK OF ABSTRACTS

Gijón, 11th-12th July 2019

Book of Abstracts

**“13th International Conference on
Industrial Engineering and
Industrial Management” and
“XXIII Congreso de Ingeniería de
Organización (CIO2019)”**

Book of Abstracts

**“13th International Conference on
Industrial Engineering and Industrial
Management” and “XXIII Congreso de
Ingeniería de Organización
(CIO2019)”**

COORDINADORES

DAVID DE LA FUENTE GARCÍA

RAÚL PINO DIEZ

PAOLO PRIORE

FCO. JAVIER PUENTE GARCÍA

ALBERTO GÓMEZ GÓMEZ

JOSÉ PARREÑO FERNANDEZ

ISABEL FERNÁNDEZ QUESADA

NAZARIO GARCÍA FERNÁNDEZ

RAFAEL ROSILLO CAMBLOR

BORJA PONTE BLANCO

© 2019 Universidad de Oviedo
© Los autores

Servicio de Publicaciones de la Universidad de Oviedo
Campus de Humanidades. Edificio de Servicios. 33011 Oviedo (Asturias)
Tel. 985 10 95 03 Fax 985 10 95 07
[http: www.uniovi.es/publicaciones](http://www.uniovi.es/publicaciones)
servipub@uniovi.es

I.S.B.N.: 978-84-17445-38-6
DL AS 1875-2019

Imprime: Servicio de Publicaciones. Universidad de Oviedo

Todos los derechos reservados. De conformidad con lo dispuesto en la legislación vigente, podrán ser castigados con penas de multa y privación de libertad quienes reproduzcan o plagien, en todo o en parte, una obra literaria, artística o científica, fijada en cualquier tipo y soporte, sin la preceptiva autorización.

Open innovation in Spanish research and technology organisations (RTOs): objectives and barriers

Uribe-Echeberria R.¹¹⁵, Igartua J.I.¹¹⁶, Lizarralde R.¹¹⁷

Keywords: OI: Open innovation; RTO: Research and technology organisation; STI: Science, technology and innovation.

1 Introduction

RTOs are special type of intermediary in the innovation system (Kerry and Danson, 2016) and had a “hybrid nature” (Gulbrandsen, 2011) in the sense that they carry out their own research and development activities. Thus, RTOs play an important role in innovation systems, increase innovation ratios in the industry, develop and implement new technologies, allow companies and other agents to increase their capacity for innovation and multiply their capacity for internal innovation (Giannopoulou et al., 2018).

Despite public policies on science, technology and innovation consider RTOs as active instruments (Hagedoorn et al., 2000) there are few studies about RTOs, and about the paradigm of Open Innovation (OI) related to these agents within the Regional Systems of Innovation, also few studying their relation-ship with the industry and other agents.

2 Objectives

The present article analyses open innovation in Spanish research and technology organisations (RTOs). The document describes and discusses their open innovation management approach, as well as the objectives and barriers when implementing open innovation in these key agents of the industrial and technological development of Spanish SMEs.

¹¹⁵Ramon Uribe-Echeberria (e-mail: ruribe@ideko.es)
Ik4-Ideko Centro Tecnológico, Arriaga, 2, 20870 Elgoibar

¹¹⁶Juan Ignacio Igartua (e-mail: jigartua@mondragon.edu)
Mondragon University - Faculty of Engineering, Loramendi 4, 20500 Mondragon.

¹¹⁷Rafael Lizarralde (e-mail: rlizarralde@ideko.es)
Ik4-Ideko Centro Tecnológico, Arriaga, 2, 20870 Elgoibar.

3 Methods

With the exploratory aim of researching the objectives, barriers and approaches of OI management in RTOs, we adopted a quantitative research approach based on a survey to RTOs. The population was based on the registry of Innovation and Technology Centers of the Spanish Ministry of Science, Innovation and Universities.

The data analysed was obtained through a structured questionnaire addressed to RTO managers (CEOs, other C-Level executives and department directors), with a wide view of their organization and the external factors influencing it.

The respondents were mostly CEOs (43.24%) or other C-Level Executives (45.95%), with an average professional experience in the RTO of 17.8 years for CEOs and 16.11 years for the other C-Level executives. The response rate was 72% (36 valid RTOs questionnaires).

4 Results

Regarding OI management, study shows that RTOs seem to be more focused on the analysis of objectives and risks, and the evaluation of results rather than in the degree of formalization of the OI management strategy.

The impact of IPR management is also stressed when analysing the OI management performance of RTOs, with the help of a simple linear regression. The model takes an R-value of 0,352, and a R^2 indicating that 12.4% of the variability of OI management depends on the importance RTOs give to their IPR management. The F statistic shows a value below the critical level (Sig 0.05), so both variables are linearly related.

5 Conclusion

The nature of the RTOs has a great influence on OI Management strategy. Besides, the biggest incentive for RTOs to embrace OI is mainly the objective to better respond to the demands of companies (partners and customers), as well as the opportunity to identify new opportunities for technological development.

The research also indicates that the main barriers for OI in RTOs are those related to the knowledge management, as well as those associated with IPR management, and economic aspects.

References

- Chesbrough, H., 2003. *Open Innovation: The new imperative for creating and profiting from technology*, Harvard Bu. ed. Harvard Business Press.
- Gulbrandsen, M., 2011. Research institutes as hybrid organizations: central challenges to their legitimacy. *Policy Sci.* 44, 215–230. <https://doi.org/10.1007/s11077-011-9128-4>
- West, J., 2014. *Open Innovation: Learning from Alliance Research*, in: Culpan, R. (Ed.), *Open Innovation Through Strategic Alliances: Approaches for Product, Technology, and Business Model Creation*. Palgrave Macmillan, New York. <https://doi.org/10.1057/9781137394507>