



**The Role of  
Universities in  
Innovation and  
Regional Development**

## **Providing doctoral skills to the regional labour market: Cases of University relations with Science Parks**

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# Providing doctoral skills to the regional labour market

## Introduction

- **Regional knowledge-based economy** in the form of Triple Helix Systems are an answer to the European strategy
- Doctoral graduates are a **key resource** for the regional knowledge-based economy
- But empirical findings point to a **skills mismatch** between business sector employers' expectations vis-à-vis the acquired competencies during the doctoral education (Usher, 2002; Morgavi *et al.*, 2007; De Grande *et al.*, 2010)

## Cases Review

## Method

## Findings

## Discussion / Conclusion

**Study aims at exploring  
if geographical proximity can contribute to the reduction of the mismatch?**

# Research Questions

## Introduction

## Cases Review

## Method

## Findings

## Discussion / Conclusion

- (i) How do universities and Science Parks **currently contribute** to the processes of providing **doctoral skills**?
  
- (ii) Do the Research and Science Parks configurations help, through **geographical proximity** to their adjacent universities, a **cognitive proximity** favouring the provision of doctoral skills?

# Literature review

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## Doctorate holders' labour market

- **overproduction of doctoral graduates** (Andalib et al., 2017)
- **skills mismatch** (CEDEFOP, 2016)
- need for **intersectoral mobility** (between industry and academia) stems out of studies of:
  - Employers' expectations (Garcia-Quevedo et al., 2012; Herrera & Nieto, 2013)
  - Personal preferences of doctorate holders are extensively studied (Roach and Sauermann, 2010; 2017)

## Science Parks & Triple Helix Systems

- **Typologies** of S&T Parks exist:
  - In function of focus on science or on business (Almeida et al., 2009)
  - In function of degree of university involvement (Albahari et al., 2017)
- S&T Parks are tools of **Regional Innovation Systems (RIS)**:
  - Entrepreneurial ecosystems (Mason & Brown, 2013)
- S&T Parks can in some cases be considered as **Triple Helix Spaces** (Ranga & Etzkowitz, 2015)

## UAB Research Park (PRUAB)

Introduction

UAB Campus in Bellaterra (20km of Barcelona)

PRUAB created in 2007 to “... *facilitate interaction between research, business and society*” (PRUAB, 2018)

Cases  
Review

Board: University, Institute of Agrifood Research and Technology, Spanish National Research Council

Method

Main fields of activity: ICT and biomedecine

Findings

Criterion for grant of membership: interest in working with research centres and/or the university

Discussion /  
Conclusion



From: UAB website

<https://www.uab.cat/web/detalle-noticia/las-start-ups-ubicadas-en-el-parc-de-recerca-uab-facturan-8-millones-de-euros-el-2014-1345680342040.html?noticiaid=1345683175895>

# Södertälje Science Park (SSCP)

Södertälje: 50km from Stockholm

## Introduction

Place of production sites of 2 multinational companies + campus of KTH (Swedish engineering school) + many small companies (biomedical sector and organic food)

## Cases Review

## Method

Initiative from companies, university and municipality to create a SP in 2016 after the closure of important R&D site

## Findings

- To re-brand Södertälje as a knowledge place (focus on Sustainable Production)
- To attract workforce and capital

## Discussion / Conclusion



From: SSCP website  
<https://sscp.se/in-english/>

# Interviews

## Annex 1: Overview of the interviews.

Case	SSCP	PRUAB
<b>Number of interviews</b>	8	9
<b>Min-max length of interviews</b>	27 min – 1 h 36 min	28 min – 1 h 11 min
<b>Number of organizations represented</b>	7	9
- <b>Of which, from the private sector</b>	4	7
- <b>Of which:</b>		
○ <b>SMEs<sup>4</sup></b>	2	6
○ <b>Established companies</b>	2	1

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# Method & Data

*Case study based on interviews*

*Use of methodology developed in Gioia et al. (2013) with Nvivo software*

	1 <sup>st</sup> order analysis	2 <sup>nd</sup> order analysis	3 <sup>rd</sup> order analysis
<b>Aim</b>	Coding from the informants' discourses	Structuring the 1 <sup>st</sup> order coding into themes (overlap allowed)	Structuring the 2 <sup>nd</sup> order coding into aggregate dimensions
<b>Number of iterations</b>	3	3	2
<b>Final number of:</b>	<b>Nodes</b>	<b>Themes</b>	<b>Aggregate dimensions</b>
a) PRUAB	34	12	4
b) SSCP	58	13	4

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# Gioia step 2 and 3

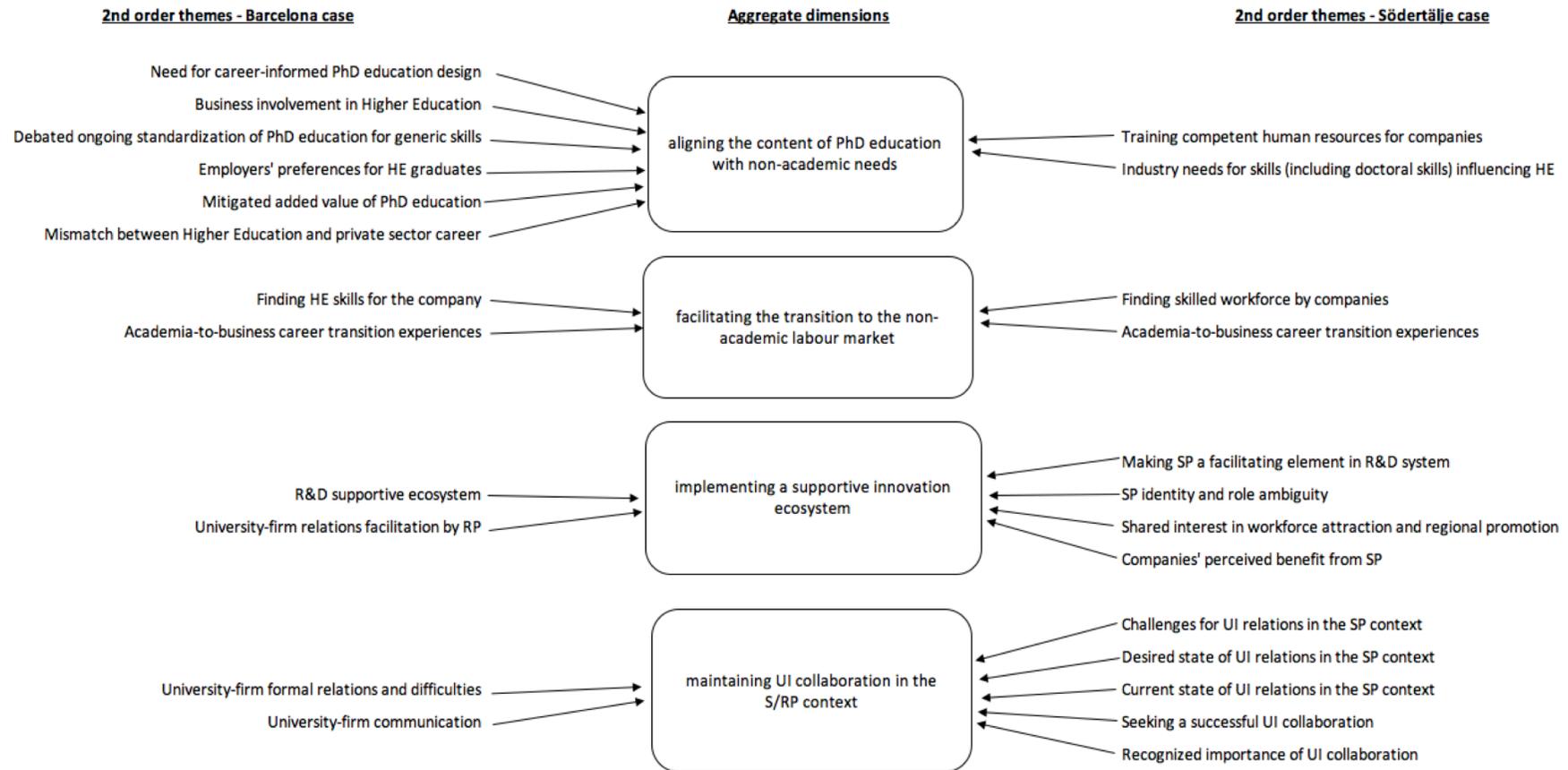
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# UAB Research Park (PRUAB)

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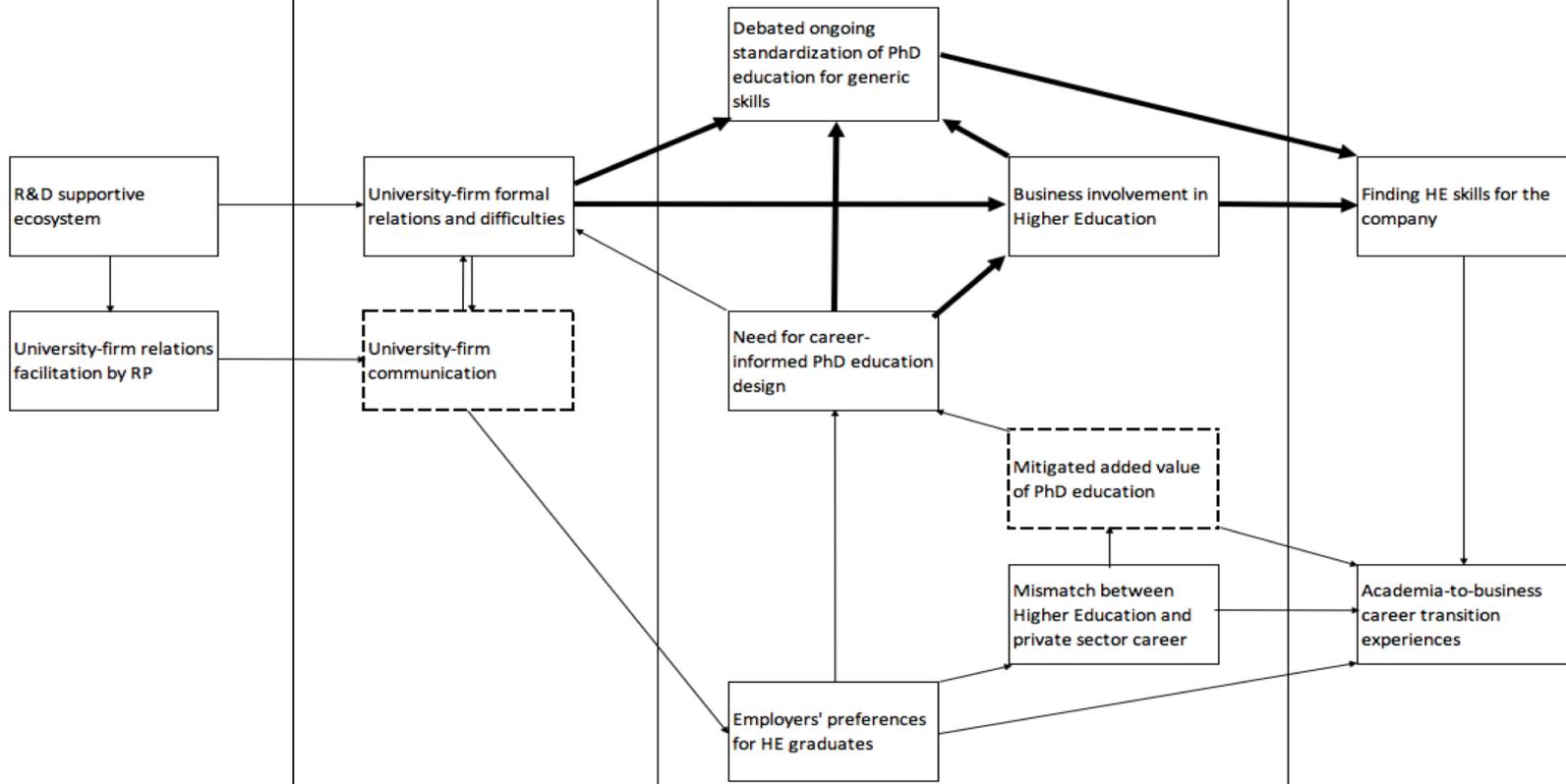
Discussion / Conclusion

Implementing a supportive innovation ecosystem

Maintaining UI collaboration in the S/RP context

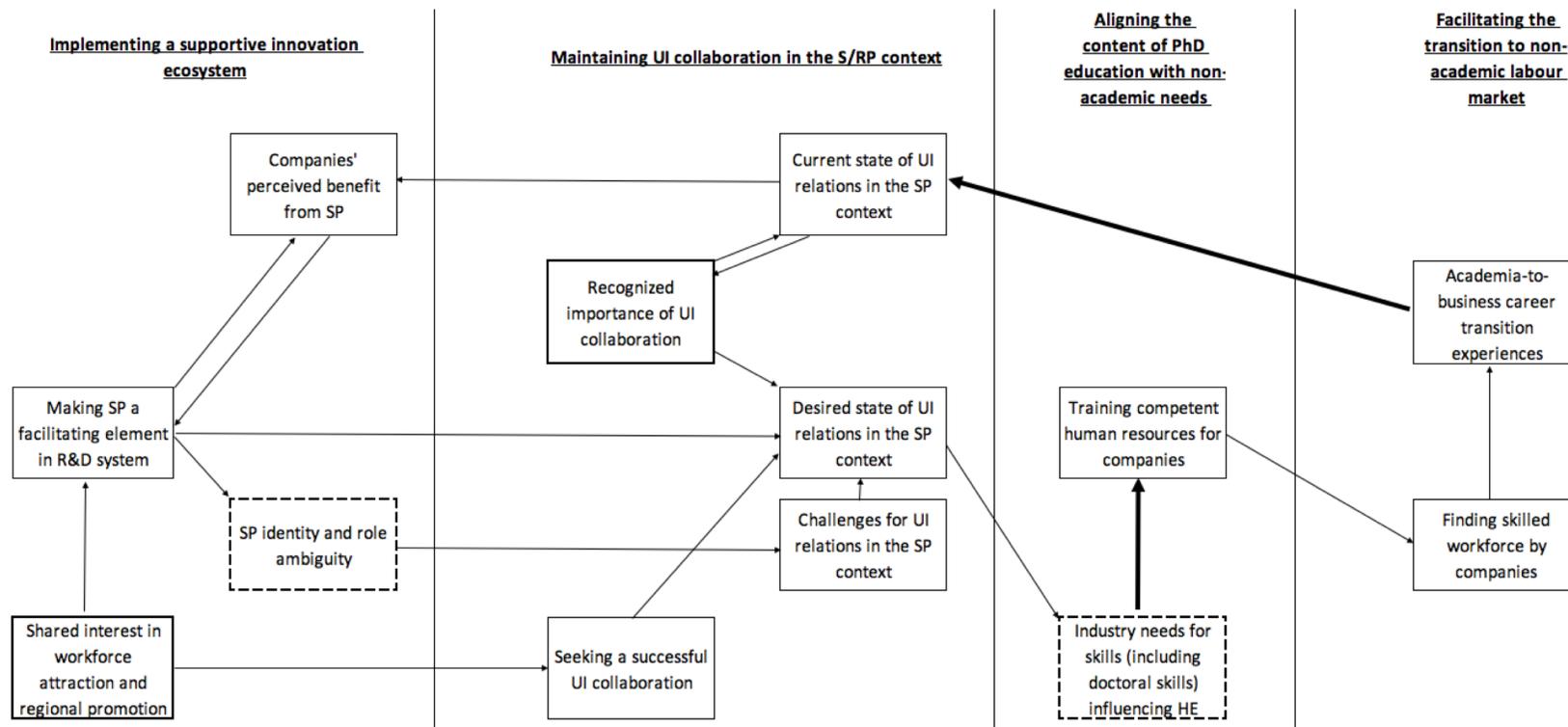
Aligning the content of PhD education with non-academic needs

Facilitating the transition to non-academic labour market



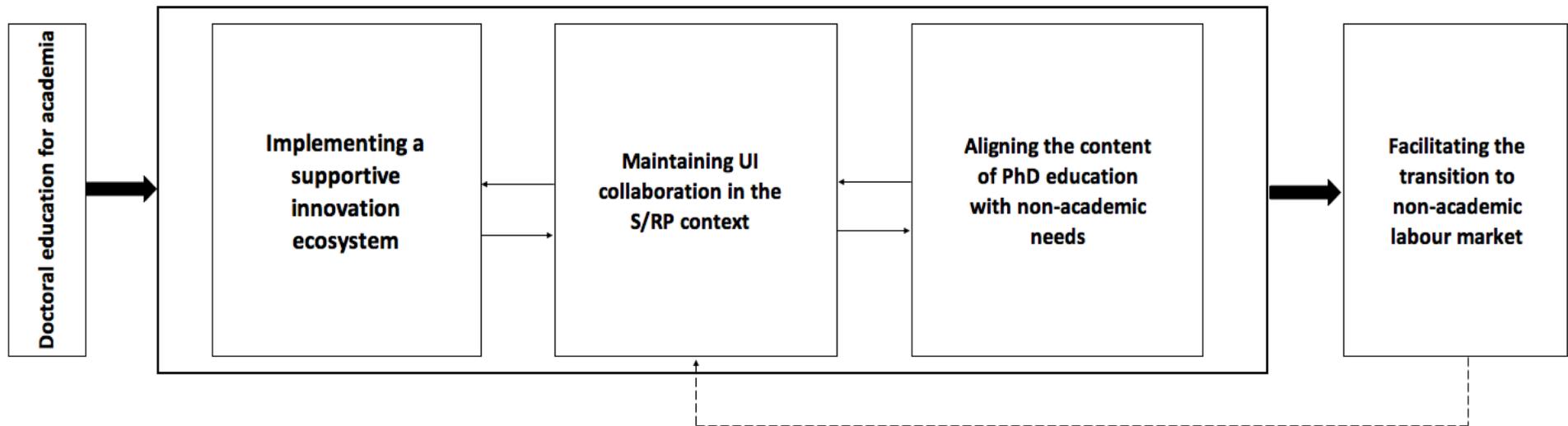
# Södertälje Science Park (SSCP)

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# A similar process is observed in the cases

## Adaptation of doctoral education to non-academic needs



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# Different stages of development of Triple Helix Spaces

Based on Ranga & Etzkowitz (2015):

	<b>Knowledge Space</b> <i>University</i>	<b>Innovation Space</b> <i>Park + tenants</i>	<b>Consensus Space</b> <i>University - Park collaboration + public support</i>
<b>PRUAB</b>	Very well developed	Well developed	Not so developed
<b>SSCP</b>	In development	Well developed	Well developed

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# Answering the Research Questions

## Introduction

(i) How do the universities and Science Parks **currently contribute** to the processes of providing **doctoral skills**?

## Cases Review

- **Similar process but different strengths and weaknesses** for each Park.

## Method

(ii) Do the Research and Science Parks configurations help, through **geographical proximity** to their adjacent universities, a **cognitive proximity** favouring the provision of doctoral skills?

## Findings

- Parks → geographical proximity + development of **Consensus Space** (cognitive proximity) → *reduction of mismatch*

## Discussion / Conclusion

# Implications

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- Need for **systematized anticipation of needs** for skills by employers;
- Need for **systematized communication** of these needs by employers to universities;
- Need for a **feedback loop** from industry to university;
- Need for creation, communication and support of **opportunities of inter-sectoral mobility**.

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