



A GEOGRAPHICAL PERSPECTIVE ON FP PARTICIPATION & KNOWLEDGE BROKERS

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OBJECTIVES

GEOGRAPHICAL PERSPECTIVES ON FP PARTICIPATION

[1]

DRIVERS OF **SPATIAL DISTRIBUTION**
DIVERSIFICATION vs. SPECIALISATION

[2]

SPATIAL DIMENSIONS OF **KNOWLEDGE BROKERS**:
BRUSSELS AS THE EU RESEARCH CAPITAL

PART-1 - INTRODUCTION

[KNOWLEDGE ECONOMY]
R&D ACTIVITIES
ARE **UNEVENLY DISTRIBUTED**
ACROSS SPACE

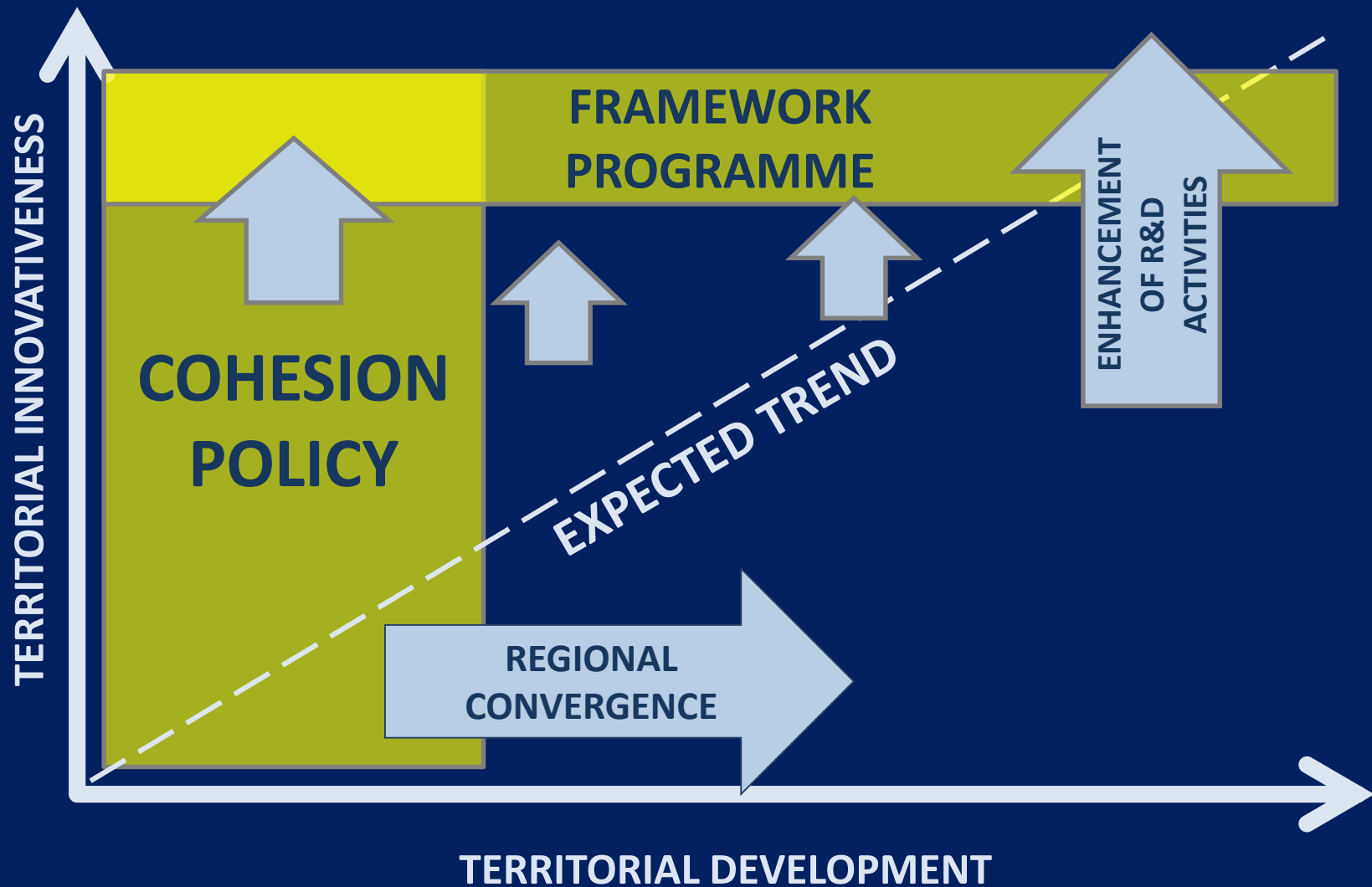
INCREASING ROLE FOR
SUPRA-NATIONAL FLOWS,
ALSO THANKS TO FP

WHAT ARE THE DRIVERS OF THE SPATIAL DISTRIBUTION OF FP PARTICIPATION?

SPECIALIZATION vs. DIVERSIFICATION? ADVANCED vs. LAGGING REGIONS?
...AND THE COHESION POLICY?

CUMULATIVE NATURE OF KNOWLEDGE *à la* MYRDAL & KALDOR:
PATH DEPENDENCE AND RISK OF LOCK-IN

AREAS OF POLICY INTERVENTION AND EXPECTED EFFECTS



HYPOTHESES

[H1] IS ECONOMIC DEVELOPMENT A PRECONDITION TO CARRY OUT EXCELLENT R&D PROJECTS (=FP)?	[H2] DOES SCIENTIFIC (SMART) SPECIALIZATION ENHANCE FP PARTICIPATION?
YES. THE DISTRIBUTION OF FP PARTICIPATION FOLLOWS ECONOMIC DEVELOPMENT & GROWTH	YES. SPECIALIZATION CAN COMPENSATE ECONOMIC UNDER-DEVELOPMENT
	NO. DIVERSIFICATION IS BETTER
NO. EXCELLENT R&D CAN BE EVERYWHERE, REGARDLESS ECONOMIC GEOGRAPHY	YES. SPECIALIZATION EXPLAINS THE FP DISTRIBUTION
	NO. DIVERSIFIED R&D CENTRES ARE MORE COMPETITIVE, REGARDLESS ECONOMIC CONDITIONS AND LOCATION

DATA AND METHODOLOGY

DATA

FP7 PARTICIPATIONS (2007-2010) - **NUTS3 REGIONS**

6 FP-THEMES: ENERGY, ENVIRONMENT, 'KNOWLEDGE BIO-BASED ECONOMY' (KBBE),
ICT, LIFE SCIENCES AND NUCLEAR

METHODOLOGY

ZERO-INFLATED NEGATIVE BINOMIAL MODEL

- IN MOST DISTRICTS, FP PARTICIPATIONS = 0
- POSSIBILITY TO CALCULATE BOTH
 - PROBABILITY TO PARTICIPATE IN FP PROJECTS, AND
 - NUMBER OF FP PARTICIPATIONS

DESCRIPTIVE STATISTICS SHOWS THAT THE RATE OF **SPECIALIZATION** IN FP PARTICIPATION HAS SIGNIFICANTLY **CHANGED OVER YEARS**

	FP7 theme					
	Energy	Environment	KBBE	ICT	Life	Nuclear
Negative binomial part						
FP5 theme	0.083 (0.008)***	0.050 (0.005)***	0.077 (0.008)***	3 0.018 (0.002)***	0.031 (0.004)***	0.032 (0.007)***
Spec. in FP5 Energy	0.003 (0.300)	0.017 (0.037)	0.034 (0.030)	0.078 (0.029)**	0.063 (0.034)°	-0.020 (0.115)
Spec. in FP5 Environment	0.124 (0.054)*	0.326 (0.064)***	0.168 (0.056)**	0.212 (0.058)***	0.231 (0.063)***	-0.166 (0.221)
Spec. in FP5 KBBE	-0.013 (0.038)	0.078 (0.043)	0.087 (0.038)*	0.068 (0.036)°	0.028 (0.043)	-0.310 (0.158)°
Spec. in FP5 ICT	0.242 (0.117)*	0.512 (0.134)***	0.322 (0.120)**	4 0.914 (0.117)***	0.681 (0.131)***	-0.272 (0.539)
Spec. in FP5 Life sciences	0.350 (0.074)***	0.531 (0.083)***	0.531 (0.077)***	0.696 (0.080)***	0.994 (0.101)***	0.237 (0.277)
Spec. in FP5 Nuclear	0.069 (0.026)°	0.087 (0.042)*	0.116 (0.041)**	0.111 (0.028)**	0.131 (0.056)*	0.084 (0.102)
Size of NUTS (GDP)	0.005 (0.002)**	0.004 (0.002)*	0.005 (0.002)**	0.010 (0.002)***	0.007 (0.002)***	0.002 (0.003)
Dynamism of NUTS3 (GDP growth)	1.376 (0.379)***	1.209 (0.332)***	1.532 (0.337)***	2 1.337 (0.310)***	1.454 (0.348)***	1.521 (0.580)**
GDP * Ob1	0.001 (0.002)	0.001 (0.002)	0.003 (0.001)*	0.004 (0.001)**	0.003 (0.001)°	0.005 (0.003)°
Constant	-1.872 (0.326)***	-2.009 (0.345)***	-2.046 (0.312)***	-2.129 (0.306)***	-2.427 (0.350)***	-0.375 (1.347)
Zero inflated part	OMITTED					
Fit statistics						
Overdispersion	0.310 (0.112)	0.455 (0.105)	0.375 (0.115)	0.436 (0.080)	0.453 (0.110)	0.915 (0.212)
Vuong statistic	1.96*	2.57**	1.61°	1 3.17***	2.73**	4.19***
LR chi²	472.91	480.50	525.25	040.22	550.45	172.74
Observations	1050	1050	1050	1050	1050	1050
Non-zero obs.	417	416	450	566	416	166
Zero obs.	633	634	600	484	634	884

MAIN RESULTS

[1]

RESULTS ARE ALWAYS STRONGLY SIGNIFICANT (VUONG-TEST),
EXCEPT FP7-KBBE WITH WEAK SIGNIFICANCE

[2]

ECONOMIC CONDITIONS DRIVE FP PARTICIPATION (HYP. 1 = YES)

[3]

CUMULATIVE NATURE OF R&D CONFIRMED BY FP5 PARTICIPATIONS

[4]

BENEFITS FROM DIVERSIFICATION (cf. VALUES OUT OF THE DIAGONAL)

Theme		Districts not in Obj. 1	Districts in Obj. 1	Diff. & sign.
FP5 Period				
SPEC.	Energy	1.56 (0.11)	0.95 (0.13)	0.60***
	Environ	0.94 (0.05)	1.37 (0.10)	-0.43***
	KBBE	1.63 (0.09)	2.07 (0.15)	-0.44*
	ICT	0.95 (0.03)	0.82 (0.04)	0.13*
	Life sc.	0.71 (0.04)	0.68 (0.06)	0.03
	Nuclear	0.54 (0.08)	0.33 (0.09)	0.21°
FP7 Period				
SPEC.	Energy	1.94 (0.14)	1.66 (0.23)	0.28
	Environ	0.99 (0.07)	1.38 (0.15)	-0.38*
	KBBE	1.27 (0.08)	1.82 (0.17)	-0.55**
	ICT	0.93 (0.03)	0.73 (0.06)	0.21**
	Life sc.	0.70 (0.04)	0.66 (0.07)	0.04
	Nuclear	0.79 (0.13)	0.63 (0.17)	0.16

FP PARTICIPATION AND CP

[1]
HETEROGENEITY ACROSS THEMES

[2]
OB.1 DISTRICTS ARE MORE LIKELY TO BE SPECIALIZED

[3]
DIFFERENCE IS STATISTICALLY SIGNIFICANT IN FEW CASES

PART-1 - CONCLUSIONS

[H.1]

FP DISTRIBUTION IS MAINLY DRIVEN BY ECONOMIC FACTORS

[H.2]

IN GENERAL, SCIENTIFIC DIVERSIFICATION ENHANCES FP PARTICIPATION,
BUT UNDER CERTAIN CONDITIONS SPECIALIZATION CAN BE POSITIVE

POLICY IMPLICATIONS

- THE COMPETITIVE FP RATIONALE REDUCES CUMULATIVE RISKS
- FP PARTICIPATION ARE FOR MORE ADVANCED REGIONS/DISTRICTS
- CP CAN PROMOTE REGIONAL PRECONDITIONS TO ACHIEVE FP EXCELLENCE

PART-2 - INTRODUCTION

KNOWLEDGE CANNOT BE TRADED
AS A COMMODITY. NEED TO ADAPT,
TRANSLATE, TRANSFER

INCREASING ROLE FOR
INTERMEDIARIES BETWEEN
KNOWLEDGE PRODUCERS AND USERS

WHAT ARE THE SPATIAL DIMENSIONS OF KNOWLEDGE BROKERAGE?
WHERE DO THEY LOCATE? ARE THEY INVOLVED IN FP PARTICIPATION?

LOCATION MATTERS TO ACCESS INFORMAL INFORMATION AND TACIT KNOWLEDGE:
LOCAL BUZZ & GLOBAL KNOWLEDGE PIPELINES



KNOWLEDGE BROKERAGE

INCREASING ROLE FOR **SCIENTIFIC AND INDUSTRIAL ASSOCIATIONS**

INTERMEDIATION WITHIN **REGIONAL INNOVATION SYSTEMS**

COMPLEX RESEARCH-POLICY NEXUS
FOR POLICYMAKING AND FOR ADVANCED TECHNOLOGIES

KNOWLEDGE CANNOT BE TRADED + BROKERS HAVE THEIR OWN STRATEGIES: WHERE TO LOCATE TO SECURE FUNDING?

[H1]

KNOWLEDGE BROKERS TEND TO BE LOCATED CLOSE TO THE EU COMMISSION TO ACCESS RELEVANT INFORMATION

[H2]

BRUSSELS PERFORMS BETTER THAN OTHER REGIONS DUE TO LOCAL 'BUZZ'

TOP-PERFORMING REGIONS

TOP-10 REGIONS IN TERMS OF FP-PARTICIPATION

(FP THEMES: ENERGY, ENVIRONMENT, KBBE)

#	Regions	FP5	FP7	%FP5	%FP7	%FP7-%FP5
1	PARIS	1166	581	7.1%	5.4%	-1.7%
2	COPENHAGEN	386	208	2.4%	1.9%	-0.4%
3	MADRID	382	240	2.3%	2.2%	-0.1%
4	ROMA	361	256	2.2%	2.4%	0.2%
5	BRUSSELS-MA	357	364	2.2%	3.4%	1.2%
6	LONDON	330	205	2.0%	1.9%	-0.1%
7	ATHENS	318	171	1.9%	1.6%	-0.4%
8	HELSINKI	313	157	1.9%	1.5%	-0.5%
9	MÜNCHEN	262	188	1.6%	1.7%	0.1%
10	VELUWE (WAGENINGEN)	252	266	1.5%	2.5%	0.9%
	TOTAL	16359	10769			

THE CASE OF BRUSSELS

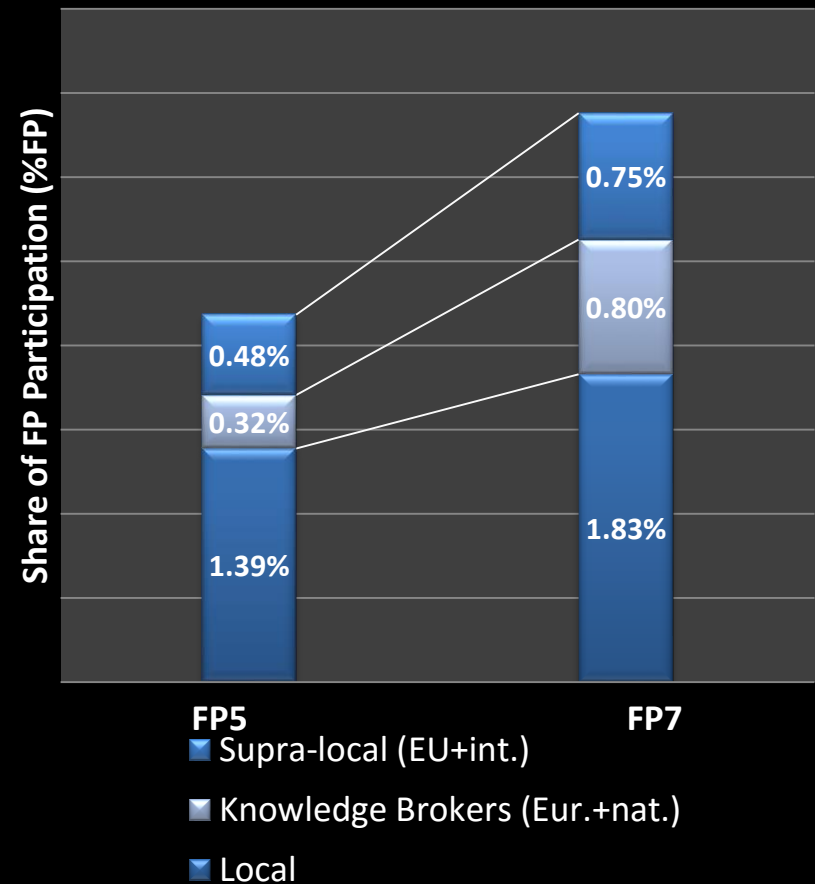
FP PARTICIPATIONS BY ACTOR AND DISTRICT

Actors	Brussels-CR		Halle-Vilvoorde		Leuven		Nivelles	
	FP5	FP7	FP5	FP7	FP5	FP7	FP5	FP7
EU-JRC	78	81						
Int. Bodies								
Eur. KB	50	83				1		
Nat. KB	2	2						
Gov.	21	26			1	3		
Univ.	43	26	2		54	37	29	20
Firms	42	44	7	10	10	11	4	8
PPO	9	4		1		1		
Others	4	6			1			
TOTAL	249	272	9	11	66	53	33	28

TESTING HYPOTHESES

ACTORS	BRUSSELS-MA		OTHER TOP REGIONS	
	FP5	FP7	FP5	FP7
EU-JRC	22%	22%	0%	0%
Int. Bodies	0%	0%	1%	1%
Eur. KB	14%	23%	0%	1%
Nat. KB	1%	1%	1%	1%
Gov.	6%	8%	6%	8%
Univ.	36%	23%	65%	65%
Firms	18%	20%	22%	18%
PPO	3%	2%	4%	5%
Others	1%	2%	1%	0%
TOTAL	100%	100%	100%	100%

FP PERFORMANCE OF THE BRUSSELS-MA



PART-2 - CONCLUSIONS

**KNOWLEDGE BROKERS DO PLAY A ROLE IN FP PARTICIPATION
& TEND TO LOCATE IN BRUSSELS TO ACCESS RELEVANT INFORMATION**

+

THE 'EUROBUZZ' BENEFITS BRUSSELS' ACTORS

FUTURE RESEARCH

- **ROLE OF KNOWLEDGE BROKERS IN OTHER R&D POLICIES**
- **BEYOND REGIONAL INNOVATION SYSTEM, WHAT SPATIAL DIMENSIONS?**

MAIN POLICY RESULTS

[1]

THE FP HAS SPATIAL IMPLICATIONS BENEFITING MAINLY ADVANCED & GROWING REGIONS: OPEN COMPETITION OF FP-CALLS IS POSITIVE, PROBABLY NO NEED TO FURTHER WIDEN PARTICIPATION, BUT CONFLICT WITH THE GOALS OF THE CP FOR A KNOWLEDGE-ECONOMY

[2]

NO CLEAR EVIDENCE IN FAVOUR OF REGIONAL (SMART) **SPECIALISATION**

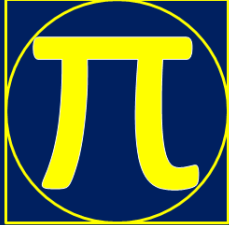
[3]

KNOWLEDGE BROKERAGE IS AN EMERGING FUNCTION AND NEEDS MORE IN-DEPTH ANALYSIS

[4]

IMPLICATIONS OF **BRUSSELS** AS THE EU **RESEARCH CAPITAL**

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GEOGRAPHY
OF RESEARCH IN EUROPE
AND TERRITORIAL POLICY
INNOVATION

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