



Better policies through ex ante conditionality? A comparison of digital growth investment choices in Cohesion policy programmes 2007-13 and 2014-20

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Outline

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policy background

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research rationale

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Next steps (qualitative
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Conclusions

Digital growth: policy background

- **ICT** diffusion fosters productivity & growth
→ European Commission's Digital Agenda is one of seven pillars of Europe 2020 Strategy
- European Structural and Investment Funds (ESIF) **important source of funding**
- Development of digital growth dimensions within Smart Specialisation Strategies (RIS3) should enable regions to identify **ICT priorities** and **investments relevant to their specific territory**

A digital agenda for Europe (2010)

EU Regulations package (2013)

Digital Agenda Toolbox (2014)

A Digital Single Market Strategy for Europe (2015)

Digitalising European Industry (2016)

Broadband Investment Guide

The role ESIF

- Digital Agenda: **ESIF** + other programmes (e.g. Horizon 2020, Rural Development Funds, Connecting Europe Facility)
- Dedicated ESIF resources constantly increasing
 - ❑ 2000-2006 > 5.5 billion € (Vincente and Lopez, 2011).
 - ❑ 2007-2013 > 15.3 billion € (Reggi & Scicchitano, 2014)
 - ❑ 2014-2020 > 21.4 billion € (Smart Special. Platform/EC/JRC)
- Within ESIF: Mainly T02 + “support measures” within any of the other 10 Thematic Objectives of the ESIF – e.g. T011
- **Ex-ante conditionalities (ExAC)** for the 2014-20 period:
 - 1) **Strategic Policy Framework for Digital Growth** 
 - 2) Next Generation Network (NGN) Plan

ExAC 2.1 (Annex XI, CPR)

- MS and Regions must develop a *Strategic Policy Framework for Digital Growth* based on **analysis of relevant socio-economic issues that characterise territorial context** (Annex XI CPR, Reg. 1303/2013)
 - composition of ICT industry
 - ageing
 - education
 - income
 - level of ICT training/skills
 - employment status
 - affordability of services
- It should consider both
 - demand:**
 - internet accessibility and digital skills as conditions for the demand for ICT solutions by households, businesses and public administrations
 - user-centred approaches to identify the needs of private and public users etc.
 - supply:**
 - ICT capabilities of local firms, infrastructure, equipment
 - services and applications

Our research questions

- We compare determinants of regional allocation of ESIF funds to digital Agenda in 2007-13 and 2014-20
- 4 key RQs:
 1. **To what extent do regional allocation strategies consider the needs emerging from the regional ICT context?**
 2. **Are 2014-20 strategies better aligned than 2007-13 to regional needs? (which may be due to the ExAC)**
 3. **Did the ExAC play a role?**
 4. **What were the strengths and weaknesses of the examined ExAC in its practical application? What lessons can be learnt for the 2021-27 thematic enabling conditions?**

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Research rationale (1)

- **Technological change is one of the ‘megatrends’** that policymakers have to deal with (Pollitt 2016)
- **Fostering digital growth has become a valence issue** → ICTs are accepted as key driver for socio-economic development (OECD 2004, Vicente & López 2011)
- **Governments in EU, OECD and beyond are investing in broadband networks”** (Mansell and Steinmueller 2013) and ICT investments have become even more salient **after the 2008 crisis** (WEF 2009, Vicente & López 2011)
- Regional digital strategies in **07-13** (co-financed by ESIF) **were not** evidence based (Reggi & Scicchitano, 2014)
- **In the EU, ICTs pushed since the 1990s** (Dabinett 2001, **RS**), subsequently **strengthened with Lisbon & Europe 2020 strategies: to invest in ICTs while matching policy ambitions with local context** → resources (SFs/ESIF), guidance and, since 2013, **conditionalities**

Research rationale (2)

HOWEVER, translating ambition into practice is not so straightforward

- Digital technologies are a *novel, rapidly evolving field requiring specialist knowledge* (Pollitt 2016)
- *There is a shortage of regional-level research and data on digital performance* (Ruiz-Rodríguez et al 2018; Vicente and López 2011)
- Against a comprehensive set of needs & broad menu of possible policy measures, resources available are limited → **while investing in ICT is uncontested, prioritization** - e.g. btw. supply/demand, type of investments (products, services, applications, infrastructures), economic sectors, territories - **is challenging** (Comitato di Pilotaggio 2018)
- The link between **priority and performance is unclear** (e.g. Kleibrink et al 2015)

It is difficult for policymakers to gain & process the evidence on ICT about how to:

- (i) Priority among different needs (substance, scale, geography)
- (ii) Identify the most effective policy measures
- (iii) Implement the most efficient delivery approaches (e.g. different forms of public procurement, PPP)
- (iv) Balance current need (upgrading) and foresight (innovation)

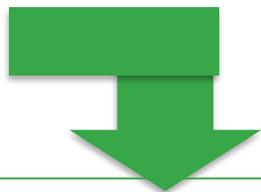
Research rationale (3): why focus on ExAC

Existing research has shown continuity in investment choices between 2007-13 and 2014-20 (path dependency), so: has the new EU policy & regulatory framework had an impact on region's allocative choices (better targeting, results-orientation)? *In particular, did the ExAC have any impact?*

Why focus on ExAC? Literature gaps:

- Vast literature on conditionalities in service delivery, external/donor aid and federal budget/policies (see review by Vită 2018) but **few academic investigations on EU CP ExACs** (w/ exceptions, Bachtler and Ferry 2015, **RS**)
- ExACs are 'an innovation of Cohesion Policy' (ECA 2017) but the understanding of their
 - **effectiveness**
 - **degree to which effects are sustainable** rather than transient
 - **practical shortcomings** (e.g. enforceability, unintended consequences such as the Matthew Effect, see Mingo and Bracciale 2016)is limited (w/ exceptions: ISMERI Europa 2018; Vită 2018; ECA 2017; Metis 2016)
- **COM proposals for 2021-27 reinforce usage of conditionalities (ExAC become 'enabling conditions')**. But do reforms go in the right direction?

Research rationale (4)



We focus on 2014-20 ESIF programmes & TO2 (compared to 2007-13 ones) as
test-case
to appraise effectiveness of ExAC as a tool for better policy design



Ismeri Europa (2018) report assesses ExAC 2.1 as one amongst those with
the “highest major reform-triggering impact”

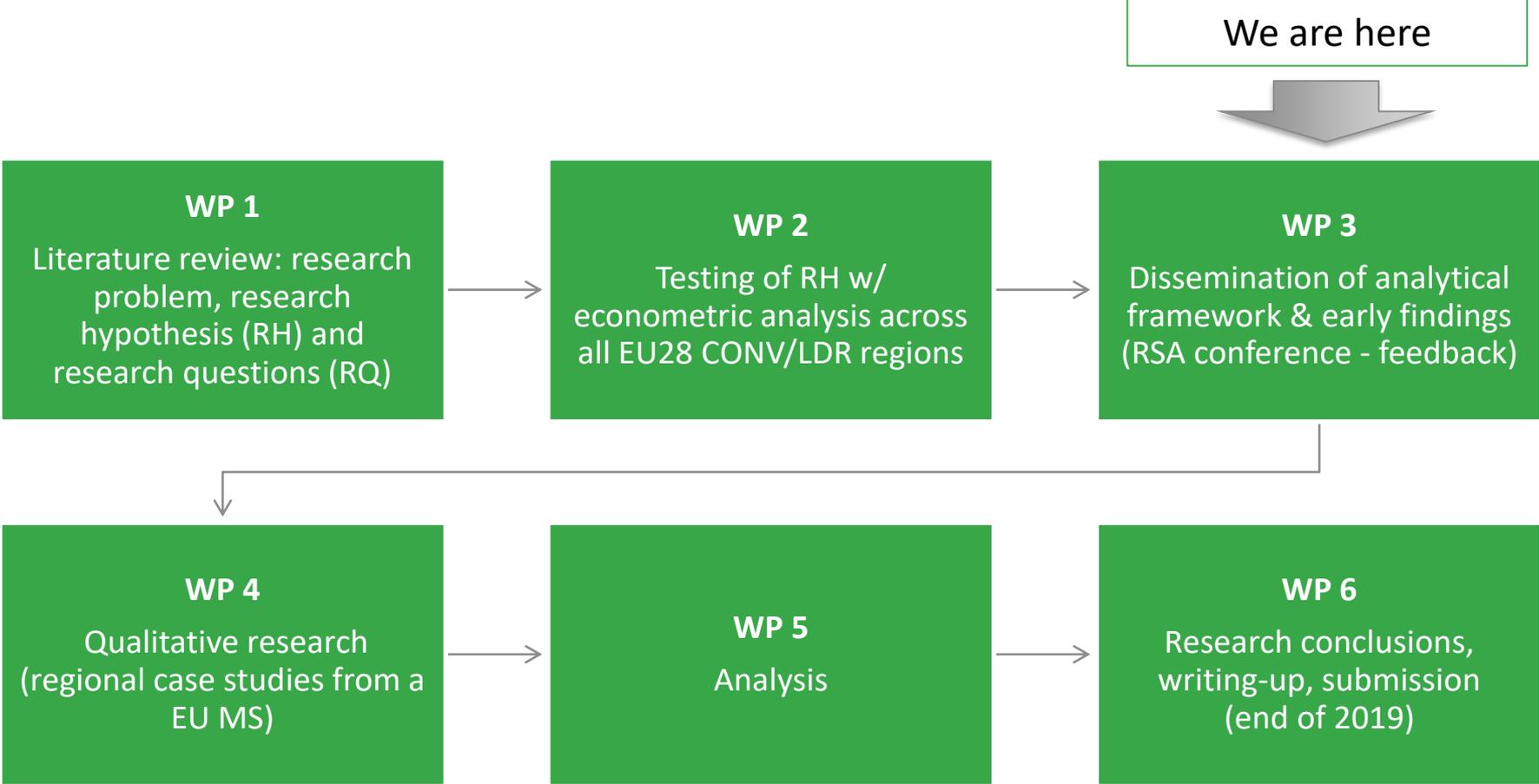


We test whether this has actually been the case
in terms of allocative choices

What we add to the literature

- Literature usually focuses on the **impact** of SFs/ESIF (ex-post)
 - ➔ We focus on the determinants of allocation choices (ex-ante)
- The literature on the use of **conditionalities** in public policies is replete but no systematic attempts have yet been made to empirically test their effectiveness in the specific context of cohesion policy
- There are no empirical studies investigating whether and to what extent regions have changed Digital Strategies from 2007-13 to 2014-20 as a consequence of the introduction of the ExAC
 - ➔ Our paper provides an attempt at this, with focus on a selected ExAC

Research steps and timing



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Data

- **European Cohesion Policy** offers an ideal ground to explore the key elements of **regional digital strategies with a quantitative approach**
 1. **ESIF are the main (the only) source of funding in lagging Regions**
 2. **Shared rules and regulations:**
funding is allocated and classified through **common categories and definitions** → data on the financial distribution of resources are fully comparable.

Empirical strategy

- **We estimate 6 (3 x 2) OLS equations:**
 - 3 macro-themes of digital agenda (broadband, e-services, ICT in SMEs)**
 - 2 planning period (2007-13 and 2014-20)**

$$RA_{t,i} = \alpha + \beta ICT_{t,i} + \gamma PE_{t,i} + \delta X_{t,i}$$

$$t=2, i=3$$

Dependent variable

- **RA**= resources allocated at regional level

Independent variables

- **ICT**= ICT context indicators: Broadband coverage, Individuals interacting with Public Administration, Enterprises who have ERP software
- **PE**= Past Expenditure
- **X**= Socio-Economic context (control variables): GDP, Unemployment, Intramural R&D expenditure (GERD)

The creation of the dataset

3 main problems to solve in order to create coherent data for 2007-13 and 2014-20:

1. Eurostat: NUTS 2 Regions in 14-20 are different from NUTS 2 Regions in 07-13
2. Cohesion Policy: Convergence Regions in 07-13 are different from Less Developed (LD) and Transition (TR) Regions in 14-20
3. Regulations of CP: *Categories of expenditure* (07-13) are different from *Categories of Intervention* (14-20) → We need to create comparable macro-areas for ICT

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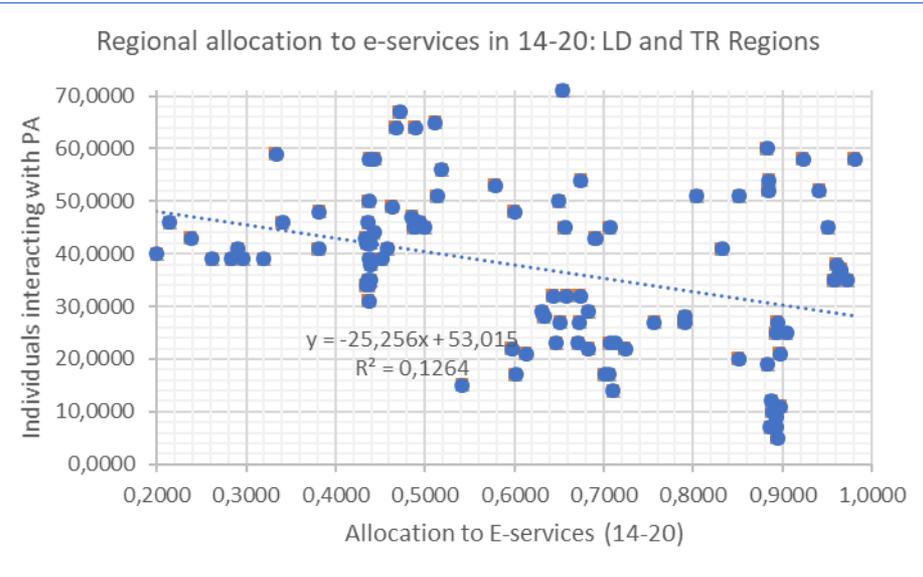
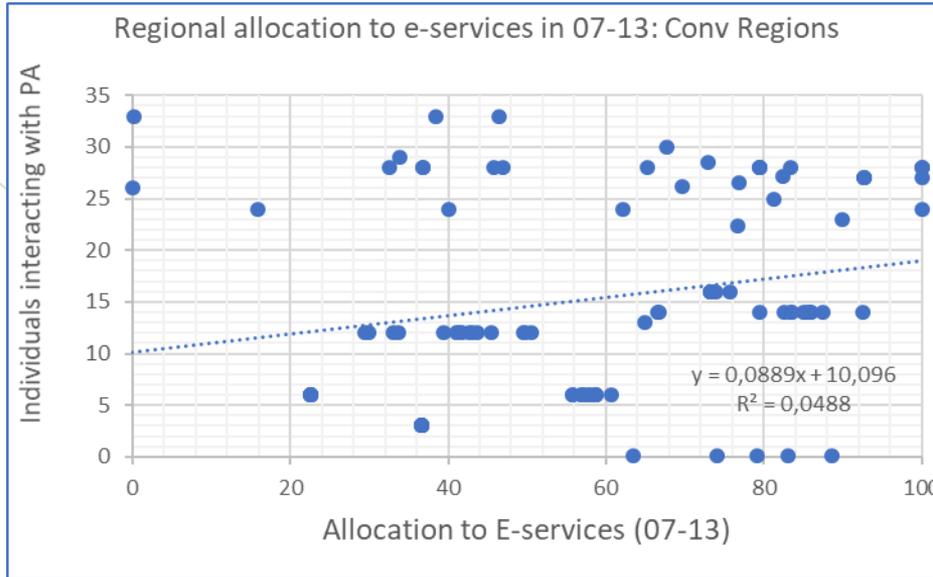
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Preliminary evidence: e-services in 07-13 and 14-20



- E-services in 07-13, EU regions tend to invest their financial resources in those strategic aspects where they already show good relative performance, showing a sort of “specialization” strategic approach. In other words, they seek to further improve their strengths rather than focus on the weaknesses that emerge from the regional ICT contexts.
- Regional strategies e-services in 14-20 SMEs seem to be directed to fill the gaps in regional contexts in ICT. For example, funding for e-inclusion are higher in the regions where e-services indicator is low.

Main results: summary

Dep Variables

Regressors	2007-13			2014-20		
	Broad Band	eServices	ICTs in SMEs	Broad Band	eServices	ICTs in SMEs
Broadband coverage	n.s.	+	-	-	+	-
Individuals interacting with Public Administration	n.s.	+	-	+	-	+
Enterprises using ERP software	n.s.	n.s.	-	n.s.	+	-
Past ICT expenditure	n.s.	+	-	n.s.	+	-
GDP per capita	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Unemployment	n.s.	n.s.	-	n.s.	-	+
R&D GERD	n.s.	n.s.	+	+	-	n.s.
<i>n</i>	82	82	82	93	93	93

Main results: summary

	2007-13			2014-20		
	Broad Band	eServices	ICTs in SMEs	Broad Band	eServices	ICTs in SMEs
Broadband coverage	n.s.	+	-	-	+	-
Individuals interacting with Public Administration	n.s.	+	-	+	-	+
Enterprises using ERP software	n.s.	n.s.	-	n.s.	+	-
Past ICT expenditure	n.s.	+	-	n.s.	+	-
GDP per capita	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Unemployment	n.s.	n.s.	-	n.s.	-	+
R&D GERD	n.s.	n.s.	+	+	-	n.s.
<i>n</i>	82	82	82	93	93	93

- The indicator “**Broadband coverage**” is negative and statistically significant only in the 2014-2020 period. This may indicate that, in 2014-2020, EU regions that are relatively weak in terms of broadband coverage tend to invest more in broadband policies, which is consistent with the indications from the EU Commission.
- Decisions on financial allocations to the broadband topic in 2014-2020 seems to take regional needs more into consideration compared to the 2007-13 period.

Main results: summary

	2007-13			2014-20		
	Broad Band	eServices	ICTs in SMEs	Broad Band	eServices	ICTs in SMEs
Broadband coverage	n.s.	+	-	-	+	-
Individuals interacting with Public Administration	n.s.	+	-	+	-	+
Enterprises using ERP software	n.s.	n.s.	-	n.s.	+	-
Past ICT expenditure	n.s.	+	-	n.s.	+	-
GDP per capita	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Unemployment	n.s.	n.s.	-	n.s.	-	+
R&D GERD	n.s.	n.s.	+	+	-	n.s.
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- While in 2007-13 the regions that invested more on **e-services** were those with relatively high proportion of users interacting with the government, in the 2014-2020 period a high percentage of investment is associated with relatively low proportions of e-government users.
- This means that **EU regions in 2014-2020 tend to allocate resources to redress imbalances in digital skills and use of government services.** The change of sign offers an indication that allocation decisions in 2014-2020 might be more focused on available data compared to the previous period.

Main results: summary

	2007-13			2014-20		
	Broad Band	eServices	ICTs in SMEs	Broad Band	eServices	ICTs in SMEs
Broadband coverage	n.s.	+	-	-	+	-
Individuals interacting with Public Administration	n.s.	+	-	+	-	+
Enterprises using ERP software	n.s.	n.s.	-	n.s.	+	-
Past ICT expenditure	n.s.	+	-	n.s.	+	-
GDP per capita	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Unemployment	n.s.	n.s.	-	n.s.	-	+
R&D GERD	n.s.	n.s.	+	+	-	n.s.
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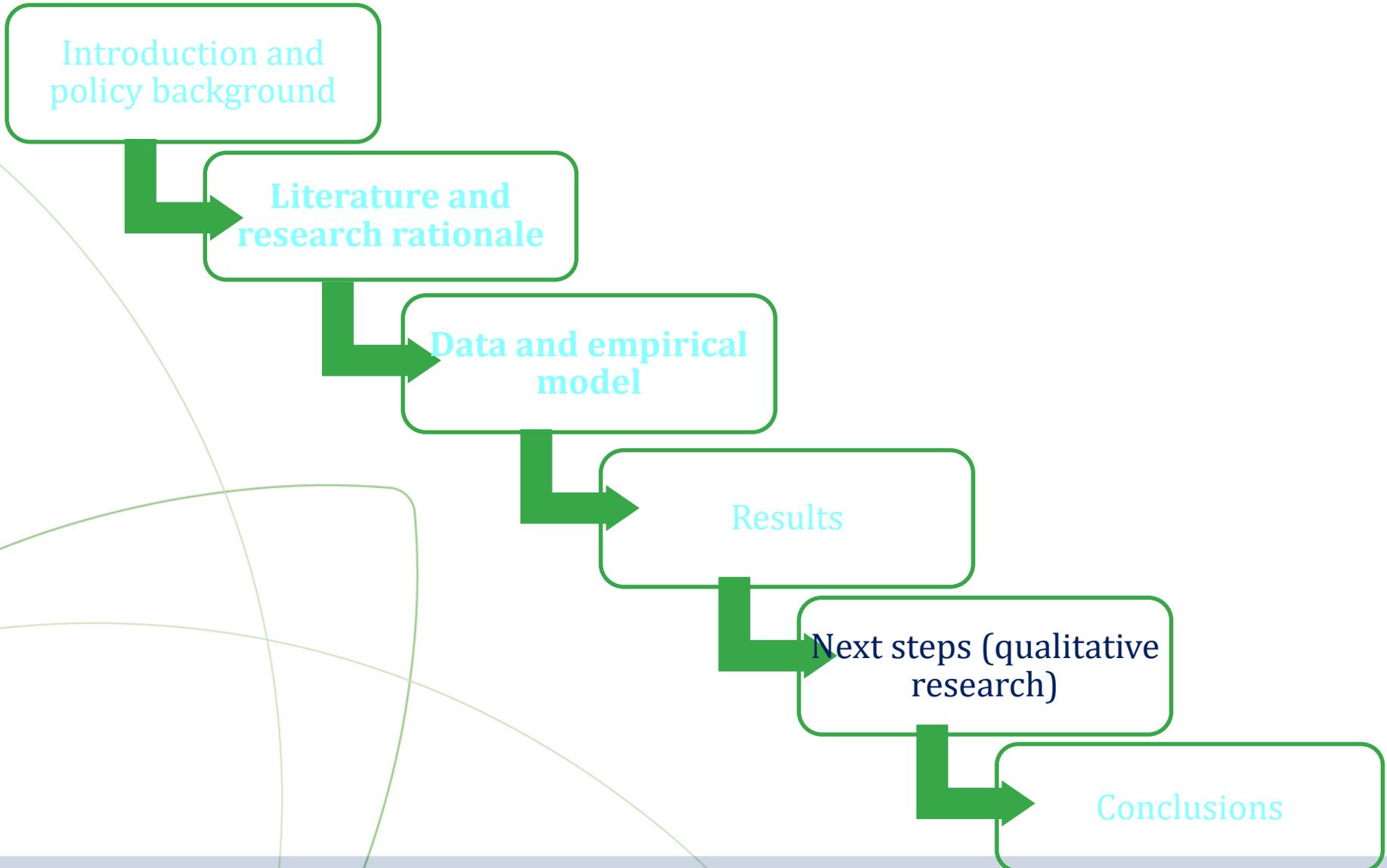
- In the case of **ICTs for SMEs**, we find a consistent pattern from 2007-13 to 2014-2020. In both periods, the coefficient of the relevant indicator (“Enterprises using ERP software”) is negative and significant  Strategy of “fill the gaps”

Main results: summary

	2007-13			2014-20		
	Broad Band	eServices	ICTs in SMEs	Broad Band	eServices	ICTs in SMEs
Broadband coverage	n.s.	+	-	-	+	-
Individuals interacting with Public Administration	n.s.	+	-	+	-	+
Enterprises using ERP software	n.s.	n.s.	-	n.s.	+	-
Past ICT expenditure	n.s.	+	-	n.s.	+	-
GDP per capita	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Unemployment	n.s.	n.s.	-	n.s.	-	+
R&D GERD	n.s.	n.s.	+	+	-	n.s.
<i>n</i>	82	82	82	93	93	93

- Regarding the past ICT investments, we find that, in both periods, allocations to e-services are positively correlated with past expenditure, while allocations to ICTs in SMEs are negatively correlated. In all these cases, the coefficient of the “past ICT expenditure” variable is statistically significant.
- Only e-services strategies show “path-dependence”.

Outline



Next steps (1)

- **Qualitative research** to solve the puzzle about whether ExAC 2.1 has been instrumental for the improved match with regional needs
- **Semi-structured interviews** with policy-makers responsible for programme design in a sample of regions from a selected MS
- Aim: **to test reasons for discontinuity in regions' T02 allocations and, specifically, whether and to what extent ExAC 2.1 has played a role:**
 1. What factors determined allocative choices to T02? What was their relative weight?
 2. Which evidence (statistical sources, academic research, policy studies) was utilised to inform policy choices? At which level (national/regional/both)? How was evidence sourced and utilised?
 3. What was impact had the National Strategy for Digital Growth 2014-20 (introduced to fulfil the ExAC)? Why?
 4. If applicable, what factors would have given the ExAC more **'bite'**?

- **Selected Member State → ITALY – Why Italy?**
 - high **national level political commitment** (key priority for consecutive governments) yet with implementation difficulties and Matthew's effect (
 - **significant ESIF allocation** (third country in absolute value after Poland and Spain)
 - **robust institutional framework** → National Agency (AgID) + territorial contact points
 - **detailed monitoring of investments** → dedicated Steering Committee (T011-T02) monitors investments to a level of detail not available elsewhere (by project, classified by expected result / implementation modality / thematic focus)
 - **high (perceived) relevance of T02 strategies** by national and regional administrations (T011-T02 annual report and 2018 survey results)

Next steps (3)

- **Interview plan**
 - **AgID** (design and implementation of National Digital Growth Strategy – two iterations)
 - **Agency for Cohesion** (design and oversight of Partnership Agreement)
 - **Sample of ROPs** : four regions that had CONV/LDR status both in 2007-13 and 2014-20: **Apulia, Sicily, Campania, Calabria** (€ xx mill) → (MAs + Digital/T02 officials from both periods)

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- CONV/LDR regions appear to have improved their targeting of T02 investments from 2007-13
 - **Broadband** seems to take regional needs more into consideration
 - **E-services**: from “specialization” to “fill the gap”
- Our HP is that **this may be due to the introduction of ExAC 2.1**
- We will test whether and how this has been the case through the next stages of research (qualitative research in a selected MS), drawing both scientific and policy conclusions (for post 2021-2027)
- Any feedback at this stage would be most welcome!

THANK YOU

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