Policy territorialisation to boost digital changes in rural areas: the French case

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Digital revolution, the 4th industrial revolution or Industry 4.0, has dramatically improved productivity and changed everyday life of modern society since the civilian use of the Internet in the late 20th century (Naughton, 2016). The Internet has not only greatly facilitated information access and exchange, but also led to development of digital technology with enormously improved computing power for data analysis and decision-making, such as cloud, big data analytics, and artificial intelligence.

Digitalisation changes the relationship between spaces and actors, and thus can potentially take rural areas into a new era. Research and practices on smart, precision or digital agriculture help to make the agriculture sector not only a key for food security but also a pioneer for mitigating climate change and protecting biodiversity (Lipper et al., 2014; Klerkx et al., 2019; Stephens & Barbier, 2021). Initiatives on smart villages, smart rural areas, or digital transformation of rural businesses try to find solutions for other aspects of rural society (Cowie et al., 2020; Palmer-Abbs et al., 2021; Rijswijk et al., 2021). Unfortunately, digitalisation has also expanded the urban-rural divide, namely, the disparities and inequalities between urban and rural areas in infrastructure coverage, access to internet, digital skills and usage, etc. (Epstein et al., 2011; Philip et al., 2017; Rotz et al., 2019; Haefner & Sternberg, 2020). It is also a reality in France (Arcep, 2021; CREDOC, 2021).

With the hope to quickly catch up with their North American and East Asian counterparts, the European Union (EU) released its first Action Plan entitled "Europe's way to the Information Society" in 1994, and made abundant reflections, debates, policies and actions to accelerate digitalisation in the last 30 years (Feijóo et al., 2007; Schäfer, 2018). France has followed the same steps, and has launched several national digital roadmaps along the time. A minister has been nominated and public agencies have been created to ensure the steering and coordination of public policies in the digital field. Different from countries with a technology-driven attitude, the EU and France quickly realised the problem of digital divide and turned to a policy of "an Information Society for All" even in the beginning phase (European Commission, 1999). Digital inclusion or e-inclusion remains one of the key points in European digital policy and the main reason for which institutional resources are allocated to rural areas apart from the paradigm of "smart agriculture".

However, local digital strategies influence directly on the territory. How to territorialise national policy (and the EU's policy in the French case) to help rural communities frame their local digital strategies is an important question. Firstly, information about the numerous initiatives and resources at national level is usually fragmented for local actors. A framework that integrates and appropriates national initiatives to serve local needs can be a response to the requirement for "partnerships and governance models that are able to cascade 'up' and 'down'

different layers and boundaries of responsibility" (ESPON, 2017). Meanwhile, territory matters for policy-making. Placed-based bottom-up approach is crucial for being able to consider local diversity and restrictions (Dutta et al., 1999; Douillet, 2003; Lacroix et al., 2006; Trouvé et al., 2007) as well as territorial co-operation and competitions (Cheshire & Gordon, 1998). It is becoming an important issue in the EU's policy to integrate Territorial Governance and Cohesion with Smart Specialisation (Navío-Marco et al., 2020; Moodie et al., 2021) and reduction of territorial digital divides (Reggi & Gil-Garcia, 2021).

The EU's Territorial Cohesion concept was recognized to have its roots in the French regional policy (Artelaris & Mavrommatis, 2020). How does France, in the context of its territorial reform (Bourdin & Torre, 2021), cascade national policies to local digitalisation or smart specialization in its rural territory? There is no research till now which provides a holistic view on this issue considering different aspects of digitalisation. The rural territory shows different dynamics in digital transformation across the country. Has the gap between the national and local digital strategies to some extent resulted in this heterogeneity?

The objective of this paper is to build a holistic framework for territorialisation of national policies to frame local digital strategies in the rural territory of France. Based upon a comprehensive review of abundant policy documents of France and the EU, and interviews with selected actors at different institutional levels, the following results are obtained: 1) a chronicle summary of national digital policies in France under the influences of the EU and a common framework for digital policy at national and local levels (digital infrastructure, skills, business model and regulation). 2) Understanding of the roles of different levels (EU, State, region, department, municipality and intermunicipality) and their interactions in framing local digital strategies in rural areas. 3) Investigation of local digital strategies and their heterogeneity among different rural areas. Recommendations for policy-makers and future research are provided. It is hoped that this study will shed light on the territorialisation of national policy and its related institutional resources to promote local digitalisation in rural areas, which will in turn contribute to territory cohesion.

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