Are small towns a good place for SMEs to innovate ? The case of 15 agrifood innovations in southwestern France

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Motivations

- Several studies in both economics and geography hilight the idea that growth is mainly driven by metropolises (Davezies and Pech, 2014; Robinson, 2013)

  => Constested by Bouba-Olga and Grossetti (2018)

- In Europe, half of the population lives in small towns (European Commission, 2011; Hamdouch et al., 2017).

- Small towns are at the heart of current debates and public policies especially in France (Yellow vests...).

Research question

Firm's location and innovation

Metropolises Vs. Small Towns

Firm's characteristics and innovation

Big firms Vs. SMEs

Are small towns a good place in order to innovate?

What are the specificities of these innovation processes?

- => Focus on SMEs (low absorptive capacity +lack of resources to innovate)
- => Focus on agrifood sector (proximities with agricultural resources)
- => Focus on Southwestern France

Literature review : an introduction

- Which factors explain SMEs' innovative activities?
  - The location of firms: metropolis vs other type of areas?
  - The determinants of innovation : choice vs constraint?
  - The practices of innovation: open vs closed innovation?

Literature review: Location of innovative activities

- Location in a metropolitan area is a factor favouring the production of innovation (externalities, agglomeration effects...) (Bosma et al., 2008; Frenken and Boschma, 2007).

- Rural areas can also favour innovation (especially in the case of agrifood firms) (Esparcia, 2014; Fearne et al., 2013; García-Cortijo et al., 2019).

- Small towns are a specific urban category that allows firms to benefit from both the advantages of metropolitan areas and rural areas without suffering all the disadvantages (Labrouche and Levy, 2019).

- **Question: Do agri-food SMEs located in small towns – linked both to rural and metropolitan areas – have specific innovation practices?**

Literature review : determinants of SMEs' innovation

- SMEs' innovation practices highlight the fact that innovation is constrained by the demand (Demand pull), especially in low-tech industries (von Tunzelmann and Acha, 2013).

- Some studies show that even in SMEs, innovation can be a choice and not a constraint, especially when innovations are determined by the supply-side (science-push) or by the will of entrepreneurs (Edwards et al., 2005).

- The entrepreneur therefore plays a role in these processes and in particular in small towns (Fritsch and Storey, 2014; Salder and Bryson, 2019).

- **Question : What are the determinants of innovation produced by agrifood SMES localized in small towns ?**

Literature review : open vs. closed of innovation

- Many studies in the management literature have highlighted the existence of collaborative or open innovation practices (Chesbrough, 2003; Vanhaverbeke, 2017).

- SMEs and large companies practice open innovation in a different way (Christensen et al., 2005).

- If SMEs have difficulties to manage collaborative innovation, due to resource constraints (Gassmann et al., 2009; Spithoven et al., 2013), these practices allow firms to complete their resource (Labrouche and Kechidi, 2016).

- **Questions: Are open innovation practices a choice or a constraint in these areas?**

Methodology: 15 case studies of innovations

- Step 1 : Selection of 5 small towns localised in Occitanie
- Step 2: Selection of 10 agrifood innovative firms localised in the 5 selected cities
- Step 3 : Realisation of 10 semi-directives interviews with the firms' entrepreneurs :
  - Theme 1: Trajectory of firm and entrepreneur
  - Theme 2: Innovative practices: focus on the two majors innovations of each firm
  - Theme 3: Pros and cons localisation in a small cities for the firm
- Step 4 : Coding of the interviews with Nvivo=> emergence of 22 categories (double-blind coding)
  - 7 types of innovation
  - 9 determinants to innovation
  - 6 barriers to innovation activities
- Step 5: second phase of coding: code of 225 verbatim inside the 22 categories defined in step 4 (double-blind coding)
- Step 6 : Principal Components Analysis using the numbers of verbatim for each categories
  - **Hypothesis : number of verbatim = importance of each categories for the entrepreneurs**
- Step 7 : Illustration of the 4 types of innovations using the verbatim and the description of ideal type innovation

Result 1: Various forms of innovation

Innovation	Characteristics	Nb of verbatims	Nb of innovations concerned	Nb of firms
Type	Open Innovation	33	13	8
	Product	25	12	7
	Process	18	6	4
	Incremental innovation	15	8	6
	Closed innovation	12	9	7
Determinants	Differentiated from concurrence	23	13	8
	Answer to market demand	19	11	7
	Resolved a technical problem	13	6	5
	Idea of entrepreneur	9	5	4
	Cost reduction	6	3	3
Barriers	Lack of times	11	10	5
	Lack of competences	5	3	2
	Technical problem	5	3	3

Overview:

- Product and process innovations
- Mostly open innovations
- Mostly incremental innovation
- Mostly demand pull innovation
- Few barriers unless the lack of time

Nb : this table include only the categories regrouping a minimum of 5 verbatims

Result 2 : 4 groups of innovation (PCA analysis)

	Type of innovation	Determinants	Barriers	Innovation
1	Process Incremental	Cost reduction Monitoring activity	Lack of public support (Lack of resources)	I15
2	Product Closed	Follow regulations (answer to market demand) (solve a technical problem)	(Lack of time)	I7 (I1, I3, I5, I9, I12)
3	Open innovation	Solve a technical problem (Differenciate)	Technical competences	I2 (I1)
4	Radical	Result of R&D	Lack of resources	I4

Result 3 : Influence of small towns

	Type of innovation	innovation	Small town influence
1	Process Incremental	I15	Isolation Lack of support
2	Product Closed	I7 (I1, I3, I5, I9, I12)	Proximity with agricultural tissue
3	Open innovation	I2 (I1)	Entrepreneurship
4	Radical	I4	

"at the beginning, we usually have a meeting every month and then we can't keep up. Or everybody should have to come to Rodez.".

"We know the products and how it works with our farmers because we are at the heart of the agricultural fabric".

It's the will of the firm and the entrepreneur. Whether it is located in a rural area or here, it is the same. Here, it's logistics; today I have no other advantages than that."

"They just came to do the field work here and the rest was done in their laboratory with the means of a laboratory"

Conclusion & Limits

- **Q1: Do agri-food SMEs located in small towns – linked both to rural and metropolitan areas – have specific innovation practices?**
- => Yes : 4 models of innovation are identified

- **Q2 : What are the determinants of innovation produced by agrifood SMES localized in small towns ?**
- => Mostly demand pull innovation and role of entrepreneurs

- **Q3: Are open innovation practices a choice or a constraint in these areas?**
- => Innovation is mostly open given the fact that firmas have to access external ressources due to the characteristics of small towns and SMEs

- **Limits:** Limited sample of 15 innovations and specific context, firms and sector

- **Further developments:** Statistical study and comparison with other sectors and territories

- Quote 1: This innovation consists in designing and building a room that allows the meat to be sorted and taken to "*the place where it must be cut and where it must be packed*"

- *Quote 2: “I think we should have 1/3 of aid for the region and the State, and we did not applied for European support because [...] if the region give, Europe will not give.”*

- *Quote 1: “Our strength is the secret, it is the know-how.”*.
- Quote 2: “*What we lack is time, clearly, we're a small firm*”

- Quote 1: The objective of this innovation was “*to remove the surface oxidation problem*”.

- Quote 2: “*When you make preserves with a certain level of sterilization, a certain level of cooking, you have constraints*”. Open innovation was thus necessary to complement the resource base of the firm: "*This company had the skills*".

- Quote 1: As the entrepreneur explains, this innovation: "i*s a side result from a more fundamental research*".

Variables	Axe1	Axe2	Axe3	Axe4
	contribution (representation)	contribution (representation)	contribution (representation)	contribution (representation)
T7-Open innovation	1.38 (0.08)	2.76 (0.09)	11.96* (0.29)	0.20 (0.00)
T1- Product	2.10* (0.12)	21.60** (0.67)	0.30 (0.01)	3.83 (0.07)
T2- process	11.79** (0.68)	0.65 (0.02)	0.05 (0.00)	1.47 (0.02)
T4- Incremental	11.74** (0.67)	0.02 (0.01)	0.43 (0.01)	0.00 (0.00)
T6- closed innovation	4.10 (0.24)	16.84** (0.53)	0.45 (0.01)	0.88 (0.02)
T5- radical	0.09 (0.01)	2.05 (0.06)	7.76 (0.19)	7.83* (0.15)
T3- Eco-innovation	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
D3- Differentiation	0.01 (0.00)	0.72 (0.02)	19.14* (0.46)	3.51 (0.07)
D1- Market pull	0.27 (0.02)	13.50* (0.42)	11.24 (0.27)	2.33 (0.05)
D2- Problem solving	0.31 (0.02)	9.43* (0.29)	22.74** (0.54)	1.34 (0.03)
D4- Entrepreneur's idea	0.65 (0.04)	2.05 (0.06)	1.67 (0.04)	0.00 (0.00)

Variables	Axe1	Axe2	Axe3	Axe4
	contribution (representation)	contribution (representation)	contribution (representation)	contribution (representation)
D7- Cost reduction	13.12** (0.75)	1.77 (0.06)	0.49 (0.01)	3.55 (0.07)
D5 - Science-push	1.09 (0.06)	0.00 (0.00)	0.04 (0.00)	43.41** (0.83)
D6- Regulation	0.34 (0.02)	17.07** (0.53)	7.66* (0.18)	0.07 (0.00)
D9- Monitoring, lack of information	15.73** (0.90)	0.00 (0.00)	0.17 (0.00)	0.45 (0.00)
D8- Environmental concern	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
F2- Time	5.77* (0.33)	10.01* (0.31)	0.18 (0.00)	2.38 (0.05)
F4- Competences	8.28* (0.48)	0.05 (0.01)	0.88 (0.02)	1.25 (0.02)
F6- Technical problem	1.04 (0.06)	1.33 (0.04)	14.46* (0.35)	0.71 (0.01)
F3- Means	6.47* (0.37)	0.15 (0.01)	0.47 (0.01)	26.33** (0.51)
F5- Public support	15.73** (0.90)	0.00 (0.00)	0.17 (0.00)	0.45 (0.00)
F1- supply	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)

	Dimension 1	Dimension 2	Dimension 3	Dimension 4
I1	0.03 (0.00)	9.79* (0.18)	24.24 (0.35)*	0.03 (0.00)
I2	0.018 (0.01)	0.09 (0.00)	34.21 (0.59)**	3.93 (0.05)
I3	1.57 (0.05)	21.74* (0.39)	31.00 (0.43)*	1.96 (0.02)
I4	1.34 (0.05)	0.90 (0.02)	0.60 (0.01)	72.02** (0.86)
I5	2.46 (0.18)	10.86* (0.43)	1.96 (0.06)	1.72 (0.04)
I6	2.04 (0.12)	0.00 (0.00)	0.08 (0.00)	1.85 (0.04)
I7	0.21 (0.01)	28.03** (0.58)	1.24 (0.02)	2.21 (0.03)
I8	2.27 (0.18)	3.49 (0.15)	2.87 (0.10)	1.84 (0.05)
I9	0.91 (0.09)	7.13* (0.37)	0.23 (0.01)	2.75 (0.09)
I10	0.11 (0.01)	0.80 (0.04)	1.12 (0.04)	4.52 (0.14)
I11	0.13 (0.03)	0.62 (0.06)	0.35 (0.03)	3.06 (0.20)
I12	2.52 (0.12)	12.88* (0.33)	0.29 (0.01)	1.28 (0.02)
I13	1.74 (0.22)	3.30 (0.23)	0.65 (0.03)	1.30 (0.06)
I14	0.24 (0.03)	0.37 (0.03)	0.76 (0.04)	0.70 (0.03)
I15	84.25** (0.98)	0.00 (0.00)	0.39 (0.00)	0.80 (0.00)