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Theme 2

INNOVATION SYSTEMS, PERIPHERIES AND LOCAL DEVELOPMENT

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This paper departs from two commonly accepted arguments: firstly, the centrality of localities in aggregating the factors that underpin change and innovation, and, thus, local/regional development; secondly, the problem of peripheral regions, which strive to overcome the infra and superstructural shortages hampering innovation and, concomitantly, local/regional development. It does that in order to discuss the extent to which the problem of peripheries can be disentangled as of unique nature and range. In other words, the paper addresses the innovation territorial differentials under the notional scope of periphery (ies).

The paper draws on a systemic approach to innovation, which provides the common research device to study a peripheral region located in a ‘*developed*’ country (the Portuguese region of Aveiro) and a peripheral region located in a ‘*developing*’ country (the Brazilian region of Garanhuns, Pernambuco). The analytical focus is placed on dairy related production systems evolving in the two regions. A comparative approach to the conditioning factors which hamper or foster technology and knowledge creation and diffusion will be developed. This approach will allow for making judgements concerning the extent to which technology and knowledge transfer and/or exchange between the two regions can be deemed as a possibility, on the one hand, and, on the other hand, the innovation systemic potential of both peripheries.

The paper finds theoretical ground in the field of economic geography (broadly considered). Obviously, particular attention is paid to the literature on (territorial) systems of innovation (e.g., Lundvall, 1992; Gregersen and Johnson, 1997; Cooke, 2001), albeit the inputs from approaches focused on specific areas such as local and regional development (e.g., Pyke et al., 2010), spatial division of labour (e.g., Massey, 1995), the higher and lower circuits of regional economies (Santos, 1992). Accordingly, the crux of the matter is the influence exerted by specific interacting sectors of the institutional fabric, the knowledge infrastructure, the specialisation pattern, the public and private demand structure and government policy on the innovative performance of a given territorial context (Gregersen and Johnson, 1997), i.e., on the direct and indirect learning processes that feed innovative performance. As such, one can argue that the paper adopts Lundvall's (1992, p. 2) definition of innovation system - "[...] a system of innovation is constituted by elements and relationships which interact in the production, diffusion and use of new, and economically useful, knowledge". This definition, concomitantly, requires the consideration of innovation as an endogenous process, i.e., the acknowledgement of the strong territorial nature of innovative activities. As put by Feldman (1994, p. 4), "*innovation is a complex geographic process with multiple spatial determinants*".

The systemic approach to innovation in the dairy productive systems gains increased relevance when taking into account that the possibility of considering the very existence of innovation systems in such a sector is object of controversy. As an example, Straeten (2007, p. 33), drawing on his analysis of dairy production in Norway, is assertive when arguing that innovation systems have "*little significance for innovation within the conventional dairy industry*". This view is not shared by Aradóttir et. al. (2005), for instance, who state that "*there is a need for increasing our knowledge of innovation systems in the periphery and to pay increased attention to the design and implementation of innovation policy and innovation facilitation practice in the rural context*".

This theoretical frame of reference guides the empirical work, which, in turn, comprises quantitative and qualitative analyses of:

- the spatial contexts, addressing dimensions such as demographics, employment, economic structure, educational level, skills, training, technological level and dynamics, knowledge creation and diffusion structures, relevant sectoral and professional associations, innovation projects, research and development;

- the dairy local production basis, including productivity, per capita income, economically active population, business skills, market structure, investments in micro and small enterprises; average turnover, workers per firm, employment opportunities, partnership development, and research and development activities;
- the relevant public policy framework, embracing the municipal, regional and national levels (state and federal levels in the Brazilian case) impacting on the dairy sector development in the areas of Garanhuns and Aveiro.

Accordingly, one can argue that the research uses analytical dimensions which are internal and external to firms (an essential feature when dealing with a systemic perspective), which provides the supportive stance for a comparing study of two 'peripheries'. Hence, this empirical and comparative approach allows for knowing more about the extent to which systemic innovation can emerge in peripheral contexts showing different levels of social and economic development. It does that by identifying bottlenecks, namely concerning knowledge and technology generation, transfer and diffusion, mapping the components, relationships and attributes of the productive systems. The research draws on primary and secondary sources, ranging from documental analysis (policy documents, evaluation reports, statistical data, institutional newsletters, etc.) to interviews with relevant actors (e.g., milk producers, dairy related firms, research and technology transfer units, government bodies, etc.).

The paper, besides an appraisal of the systemic potential existing in the two peripheral territories, provides insights on local sector-specific policy design and inherent implementation challenges and a learning structure supporting interaction between the two regions under scrutiny.

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