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African Journal of Science, Technology, Innovation and Development (AJSTID)

Special Issue On:

INNOVATION TAKE-OFF

EMERGENCE AND CO-EVOLUTION: WHAT PROSPECTS FOR INNOVATION-DRIVEN DEVELOPMENT IN THE SOUTH

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Background Note

“innovation take off” rests on the premises that innovation systems need strong policy impulses from government for innovation to take place effectively.

Innovation take off is the pre requisite for innovation systems to be operating in a conventional manner. Innovation systems theory has long been characterized by the difficulty into using it in system construction (Johnson and Lundvall 2003, Lundvall 2002), yet many African and Latin American Countries have to build their innovation systems *a posteriori*. When looking at advanced and emerging countries, notably the BRICS, where innovation is effectively taking place, a variety of situations exist (Abramovitz, 1994, Avnimelech and Teubal, 2006). Rich studies have been conducted within the catch up group in the Globelics network using sector specific approaches (Nelson, Malerba, Sunil etc..).

In many Developing Countries, innovation systems construction takes place in a very specific environment characterized by privatization of public concerns, the rise of a strong small and medium enterprises (SMEs) sector, but with very little experience in the fields of R&D and innovation, and a relatively weak industrial sector in terms of performances. It often suffers from high levels of obsolescence both in terms of human resources and equipment. Industry in most countries is in the emerging stage in spite of the fact that some countries have been trying to industrialise and indeed catch up with the more advanced ones, for nearly forty years: this is the case for example of Algeria and Egypt in North Africa and Nigeria and Kenya in sub-Saharan Africa. South Africa can be singled out as a specific case in this respect, for the fact that industrialization has been going on for well over a century and effective catch up has taken place in certain sectors.

Regarding the specificities and stage of development of many developing countries such as African and Maghreb countries, it seems more appropriate to focus on the issue of “innovations take off”. Indeed, on the basis of the knowledge and expertise accumulated previously, it is increasingly evident that several countries have globally gathered most of the

necessary conditions (education, infrastructures, research policies and programmes and government support) for innovation to take place and for the creation of new knowledge yet and what is missing is an effective take off of innovation. This take off should be done in an organized manner and should be adapted to the realities of these countries, who can greatly benefit from the experience emergent countries which successfully made their transition towards “catch-up”.

From a conceptual point of view, take off, while borrowing, for the time being, from the stages of growth theory of Rostow (1960) does in any way fully adhere to the approach, aware of the weaknesses of linear and standard models from an evolutionary perspective. It recognises that complex processes take place and multiple trajectories are possible incorporating a set of physical, financial, human, and institutional prerequisites for innovation to take place. It is indeed our main concern that we examine this complexity. “Take off” appears to be more appropriate for several reasons: it is firstly more adapted to the current state of the economies where innovation systems are still in the construction stage, characterized mostly by incomplete NSI, weak or missing links, weak incentive systems and highly entrenched rent-seeking behaviour on the part of various key players.

Secondly it amplifies the necessity to gather certain preliminary conditions to reach a critical mass required for innovation to take place.

Thirdly, take off appears to be a vital stage in the emerging countries that have evolved in the catch up stage. This can be seen in Brazil, China, South Korea and India. Finally, take off needs a strong State support particularly regarding the institutional dynamics in terms of regulations, salaries and incentive systems, public procurements etc. while the conditions of market dynamics are being put in place to effectively play the role of a major driver of innovation in many developing countries of Africa and Latin-America.

Several attempts have been made within the Globelics framework to apply innovation systems theory to study possible initiatives for take off (Djefflat 2008). They need identifying analysing and integrating in our work.

While take off tries to capture the needed dynamics of innovation-driven development based of innovation system theory, it is not always unanimously accepted in academic circles. Other tools are preferred namely “Emerging Innovation Systems” (Djefflat 2010), Co-evolution (Mammo 2009) and others. It is useful to confront views and opinions about these alternatives and others

Objectives

The objectives of this special issue is to highlight theoretical and conceptual thinking on innovation take off using innovation systems theory: It is necessary to come up with an open and flexible analytical grid that would make the different case stories interrelated if not strictly comparable. It is necessary to build knowledge through the identification and the analysis of successful innovation take off success stories in Africa, Latin America and elsewhere, identify and analyse conceptual and empirical dimensions of take off as a whole,

as well as share the best practices in this field. Both sectoral and territorial approaches will be used. The old Sappho study (Rothwell, 1985) might inspire us to look for inter- and intra-organizational 'interaction' and 'relationships' as causes of success and failure while giving, however stronger weight also to 'less regular' political and institutional factors.

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Word Length : 8000 words (including 150 words Abstract and 6 Keywords)

Style and Format: Please visit AJSTID Website <http://www.ajstid.com>

Deadlines :

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6th December: Deadline for sending full paper

31st January, 2011: Notification of authors of acceptance of papers

About The Journal

AJSTID is a multi-disciplinary and refereed international journal with a special focus on science, technology, and innovation in developing economies, with a special reference to Africa. It has been established on the basis of the recognized role of innovation in the development of economies and on the relative absence of research in the area, particularly in the case of Africa. *AJSTID* seeks to encourage research along three broad streams. This first is the role of science, technology and innovation in the process of industrial growth and development. The second stream concerns the broader area of socio-economic development. The third invites work exploring the inclusion of innovation and knowledge in cross border integration processes particularly in Africa. *AJSTID* will solicit submissions on both these research streams at various levels: firms, sectors/ industries/clusters, regions and countries.