



Contents lists available at ScienceDirect

## Technological Forecasting &amp; Social Change

journal homepage: [www.elsevier.com/locate/techfore](http://www.elsevier.com/locate/techfore)

## Entrepreneurship and sustainability: The need for innovative and institutional solutions

Adel Ben Youssef<sup>c</sup>, Sabri Boubaker<sup>b</sup>, Anis Omri<sup>a,\*</sup>

<sup>a</sup> *Faculté des Sciences Economiques et de Gestion de Nabeul, Campus universitaire Mrezga, Route Hammamet, 8000 Nabeul, Tunisia*

<sup>b</sup> *Champagne School of Management, 217, Av. Pierre Brossollette, CS 20710, 10002 Troyes CEDEX, France*

<sup>c</sup> *GREDEG-CNRS & University Côte d'Azur, France, ISEM 24, Avenue des Diables Bleus, 06300 Nice, France*

### ARTICLE INFO

#### Keywords:

Entrepreneurship  
Sustainability  
Innovation  
Institutional quality

### ABSTRACT

The role of innovation and institutional quality for achieving sustainability are important issues tackled by current sustainable development debates, particularly in developing countries. Using a modified environmental Kuznets curve model, the present study improves our understanding of the critical roles of innovation, institutional quality, and entrepreneurship in structural change toward a sustainable future for Africa. Our empirical results show that formal and informal entrepreneurship are conducive to reduced environmental quality and sustainability in 17 African countries however informal entrepreneurship contributes more than formal entrepreneurship to this environmental degradation. The relationship between entrepreneurship and sustainable development turns strongly positive in the presence of high levels of innovation and institutional quality. This study contributes to this emerging research strand by clarifying the conditions that allow African countries to move toward more sustainable economies. Our results highlight the important roles played by innovation and institutions for achieving sustainability in Africa.

### 1. Introduction

Despite the promise entrepreneurship offers for sustainability and climate change reduction, its role and nature are uncertain. Work on sustainability within the general entrepreneurship literature is scarce (Hall et al., 2010). Accordingly, although entrepreneurship is recognized as allowing the achievement of a more sustainable economy, there are gaps in our knowledge about the conditions necessary to reach this objective. In this paper, we investigate innovation and institutional quality as necessary conditions for entrepreneurship to create economic growth and advance social and environmental goals.

To do so, we apply our methodology to examine the case of African countries. The ability of the African continent to tackle many of the serious challenges it faces, such as climate change, depends strongly on its ability to promote new kinds of entrepreneurs, adopt new technologies, and build institutions to manage those changes. Prior studies show that many of the major killers in Africa are climate sensitive. Without policy intervention, by 2030, climate change will increase the population at risk of malaria in Africa by 170 million (Foresight, 2006), and by the 2080s, will increase the global population vulnerable to dengue fever by 2 billion (Hales et al., 2002). Urban air pollution causes

about 1.2 million deaths each year in Africa (WHO, 2009), mainly by increasing mortality from cardiovascular and respiratory diseases. The indirect effects of climate change are also significant. In sub-Saharan Africa where agriculture relies on precipitation, yields are expected to drop by up to 50% by 2020 (Parry et al., 2007), putting millions at risk of a food crisis and malnutrition (World Bank, 2010). Despite growing understanding of the effect of climate change, the region's capacity to address these risks is weak.

We consider 17 African countries during the period 2001–2014 for three main reasons. First, the selected sample of countries includes low income, middle income, and emergent countries – based on level of development. Thus, it accounts for the variety of situations found in Africa. Second, the countries in our sample account for a large share of Africa's GDP, making our conclusions valid for a large part of Continent.<sup>1</sup> Third, Africa is a fast growing continent; its population is expected to more than double over the next 30 years, increasing from 1 billion to 2.3 billion people by 2050. Development in African needs to follow a different path from that pursued in Europe and America. The sustainability of African economies will be a major challenge for future generations across the world.

Our paper makes three substantive contributions to the literature.

\* Corresponding author.

E-mail addresses: [adel.ben-youssef@gredeg.cnrs.fr](mailto:adel.ben-youssef@gredeg.cnrs.fr) (A. Ben Youssef), [sabri.boubaker@get-mail.fr](mailto:sabri.boubaker@get-mail.fr) (S. Boubaker), [omrianis.fsegs@gmail.com](mailto:omrianis.fsegs@gmail.com), [a.omri@qu.edu.sa](mailto:a.omri@qu.edu.sa) (A. Omri).

<sup>1</sup> Note that data constraints do not allow us to work on a larger sample since many variables are missing for several countries.

<https://doi.org/10.1016/j.techfore.2017.11.003>

Received 31 December 2016; Received in revised form 6 October 2017; Accepted 1 November 2017  
0040-1625/ © 2017 Elsevier Inc. All rights reserved.

First, it incorporates entrepreneurship activity into the standard environmental Kuznets curve (EKC)<sup>2</sup> model and demonstrates that environmental quality in Africa is affected negatively by both forms of entrepreneurs, i.e. survival entrepreneurs, and innovative Schumpeterian entrepreneurs. Our paper takes into account various forms of entrepreneurship (formal and informal) given the fact that the size of the informal sector is important in Africa and more than one-third of small businesses are not legally registered. Second, it builds a modified EKC model to examine the contribution of entrepreneurship to sustainable development. Third, it appears that while entrepreneurship is currently being discussed as an important channel for fostering sustainability, there is much uncertainty regarding the conditions needed to move toward sustainable products and services. This study contributes by incorporating innovation and institutional quality as conditional variables to move toward sustainable entrepreneurship.

The remainder of the paper is organized as follows. Section 2 reviews the relevant literature; Section 3 describes the methodological approach; Section 4 presents and discusses the empirical results; and Section 5 discusses the study's main conclusions and policy implications.

## 2. Literature review and analytical discussion

The prior literature shows that entrepreneurship is considered important for the development of sustainable products and services and the implementation of new projects addressing various environmental and social concerns. The importance of entrepreneurs as vehicles of economic and societal transformation is not new in the economic literature. The three main strands of work that deal with this topic are the sustainable entrepreneurship literature, the “growth penalty” literature and the EKC literature.

### 2.1. Sustainable entrepreneurship literature

Sustainable entrepreneurship is a business creation process that links entrepreneurial activities to the achievement of sustainable value-related social and environmental goals (O'Neill et al., 2009). Many authors including Drucker (1985), and Matos and Hall (2007) among others, have examined this link. For instance, Cohen and Winn (2007), show that several types of market imperfections contribute to environmental pollution. They are considered sources of significant entrepreneurial opportunities to establish the foundations for an emerging model of sustainable entrepreneurship which slows degradation and gradually improves ecosystems. Similarly, York and Venkataraman (2010) propose entrepreneurship as a solution to rather than a cause of, environmental degradation. The authors develop a model that embraces the potential of entrepreneurship to augment regulation, corporate social responsibility (CSR), and activism related to resolving environmental problems. For Sheperd and Patzel (2011), entrepreneurial activity can reduce environmental pollution and deforestation, preserve the ecosystem, and improve freshwater supply and agricultural practices. As a result, entrepreneurship could be the solution to numerous environmental and social problems (Hall et al., 2010; Senge et al., 2007; Wheeler et al., 2005).<sup>3</sup>

<sup>2</sup> According to the Environmental Kuznets Curve (EKC) hypothesis, as income (GDP) increases, emissions increase as well until some threshold level of income is reached after which emissions begin to decline. There is in existence a plethora of empirical literature of EKC. For empirical and analytical surveys the reader can see Dinda (2004) and Stern (2004).

<sup>3</sup> Several peer-reviewed journals such as *Harvard Business Review*, *Journal of Business Venturing*, and *Entrepreneurship: Theory and Practice* have published special issues on this topic in recent years.

### 2.2. Entrepreneurship and “growth penalty”

Another literature stream stresses three complementary arguments explaining the relationship between institutions, entrepreneurship, and sustainability in the specific context of less developed countries (LDCs).

First, most LDCs suffer from a “growth penalty” (Audretsch et al., 2002). In other words, a marginal increase in the rate of entrepreneurship in LDCs increases growth rates. Since the number of entrepreneurs in LDCs is suboptimal and these countries need to increase the number of entrepreneurs, promoting entrepreneurship especially among qualified workers population is fundamental for their economic growth. Institutions created for that purpose could foster the desired type of entrepreneurship and provide incentives for starting businesses in specific domains including “green” sectors.

Second, most LDCs have large numbers of self-employed people. Most entrepreneurs are “survival entrepreneurs” who create little added value. Several works, starting from the seminal paper by Acs (2006), show that “self-employment” is negatively correlated with per capita income. Increasing “self-employment” and the number of survival entrepreneurs has a negative impact on economic growth. The solution proposed is to foster “Schumpeterian” and innovator entrepreneurs. “Schumpeterian innovative entrepreneurs” coexist with “defensive and necessity entrepreneurs” (Baumol, 1990) - the latter term describing individuals who enter a new business not based on market opportunities and innovative ideas but merely because they need an income to survive. This kind of “survival-driven” self-employment is particularly diffuse in LDCs (Naudé, 2009), where poverty and lack of formal opportunities often push people into entrepreneurial activities ranging from street vending to traditional and personal services - in most cases within the informal sector (see, e.g., Stam and van Stel, 2011; Goedhuys and Sleuwaegen, 2010). Survival entrepreneurs can cause turbulence and negatively affect economic growth (Quatraro and Vivarelli, 2014). Moreover, increasing survival entrepreneurship can be counterproductive from both an environmental and an economic point of view (Vivarelli, 2013). In contrast, innovative entrepreneurs create jobs, transform the economy, and increase sustainability (Silvestre, 2015). Institutions, both public and private, can play an important role in promoting entrepreneurship among skilled students and workers. The promotion of entrepreneurship education for students and qualified people is the type of public policy that is likely to achieve better returns from entrepreneurship in LDCs. In its absence, the rate of entrepreneurship among students will remain low. These populations of “potential entrepreneurs” are good candidates for becoming “innovators” and “Schumpeterian” entrepreneurs and accelerating national economic growth and sustainability.

Finally, reforming institutions in order to decrease bureaucracy, cronyism, rent capture, and political patronage can increase the motivation of innovative entrepreneurs to create a business. Many are discouraged from business creation by the amount of time needed for non-productive (bureaucratic) activities, and the fear that they will be unable to capture value from their business because of a poorly developed innovation protection system. Establishing the necessary institutions can foster the efficacy and efficiency of new entrepreneurs in the context of LDCs. A one-stop shop, electronically enabled administration is an example of the type of institutional reform that could increase entrepreneurship and national sustainability.

The economic literature advocates innovation as a catalyst for change allowing institutions, organizations, and countries to move toward more sustainable products and services (Silvestre, 2015). Almeida et al. (2013) and Lozano et al. (2013) suggest that society should demand more initiatives and investment from enterprises, education institutions, and governments to adopt innovative solutions to solve current sustainability challenges. Thus, acknowledgment of entrepreneurship and innovation as solutions to, rather than causes of, social inequality and pollution (York and Venkataraman, 2010) will encourage reconsideration of their important role in establishing

Download English Version:

<https://daneshyari.com/en/article/7255559>

Download Persian Version:

<https://daneshyari.com/article/7255559>

[Daneshyari.com](https://daneshyari.com)