

Chapter 7

Innovation in Latin America: An Eternal Recurrence?

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Abstract

The chapter analyzed the conditions and challenges of the innovation in Latin America, and the historical trend in its study in the framework of this handbook. The transformative and inclusive approach of the innovation was evidenced as the most significant ascendent trend in the region. Furthermore, this was identified as a breaking point of the linear individualism of the entrepreneurship and the innovation in Latin America due to this type of innovation that requires high levels of collaboration and strong institutional leaderships. It was highlighted that the major challenge of recovery in the region should be accompanied by a deep transformation in the quality of education because the systematic generation of innovation implies capabilities rather than wills. The chapter closes with a critical reflexion of the phenomenon, the new lines of research in the region, and its implications.

Keywords: Latin-American innovation; innovation trends; challenges of Latin-American innovation; collaboration for innovation; socio-institutional collaboration; new capabilities of innovation

This life as you now live it and have lived it, you will have to live once more and innumerable times more....

From Nietzsche's *The Gay Science*, s.341,
Walter Kaufmann translation.

Transformation Through Innovation, Is It a Feasible Possibility in Latin America?

The major challenge for the world is driving a sustainable recovery after the pandemic, although the structural magnitude of its impact has not yet been precisely determined. Specialists from various fields – productive, social, and public – agree that digital transformation and climate change are the two non-return impulses that accelerate social change and that the two main recovery paths are innovation and entrepreneurship. In the case of Latin America, the literature shows its poor innovative performance, its low levels of entrepreneurship, and its STI policies that have not achieved a functional innovation ecosystem. Therefore, the challenge of recovery in the region grows exponentially because this should be accompanied by a deep transformation in the quality of education – the systematic generation of innovation implies capabilities rather than skills so this pressing transformation should be hand in hand with changes in infrastructure and people.

The pandemic has reliably shown us that knowledge – with basic science closer than ever to application –, cooperation, and solidarity are essential for innovation. Furthermore, it has shown that accelerated urbanization and the loss of biological biodiversity, and the uncontrolled expansion of the agricultural frontier, and the reduction of protected natural areas have humanity at high zoonotic risk and high climatic stress. However, it has also been evidenced that urgency and emergency trigger the search for transformative and inclusive solutions – technological, social, environmental, economic innovations, among others. – and the innovation requires high levels of collaboration and faceless leadership – beyond individual protagonists, it is required institutional leadership with individual will. In the modern history of Latin America, this is a turning point of the linear individualism of entrepreneurship and innovation. Based on these assumptions, the innovation discussed throughout this Handbook is a dynamic process, territorially adapted, reproduced, and encouraged.

Latin America is a territory with wide inequalities gaps, which has had an unstable productive and social behavior; despite a series of incentives with stationary behavior for innovation activities, these have not achieved consistent results and the growth of technological dependence has prevailed, besides the State, its institutions, and the dynamic capacities available in the region have not been at the height of the development that is required (Álvarez & Palacios, 2021). An important debt of the region is the poor linkage of its universities with the actors of the environment to accelerate its innovation processes. Since the 1970s, [Sábato \(1971\)](#) was a precursor of this idea and raised the urgency to stimulate the interactions between the three main actors in the region – government, enterprises, and academia – to accelerate the development of solutions – innovations. However, little has been achieved.

The literature on innovation in the region shows a strong proportion on the diagnosis – the determinants, the consequences, the strategic business responses based on innovation; above all, it has shown innovation as an abstract phenomenon and not as a mechanism that operates with defined functions (Álvarez &

Palacios, 2021). The publications with a minimum proportion refer to the process of systematic generation, prospective analysis, and practical systematization of innovation, and are limited to reductionism in the selection of strategies by the actors and institutions involved with the innovation and it makes evident the absence of a strategic, organizational, and operational framework (Álvarez & Palacios, 2021). A relevant coincidence in numerous current papers is the new demand for knowledge and disruptive digital skills that the Latin American territory requires to advance the achievement of sustainable development with social justice (Álvarez, 2020). Furthermore, some Latin American academic circles have questioned the importation of theories from the western hemisphere (Montiel, 2021); nevertheless, the reversing of this pattern implies the creation of Latin American innovation communities with high interaction between multilateral institutions, and diverse productive and social actors of the ecosystem.

In this circumstance, the complex myriad under the innovation umbrella demands to recapture the afterthought about the learning of the historic failure or success experiences in Latin America. It is also necessary to meet the challenges of the reinvention of the region through innovation, of the generation, transfer, and use of knowledge from Latin American Universities to their ecosystem and of the accomplishment of Sustainability Development Goals.

For instance, Fintech© is a regional community of innovation with relevant results to transform local industries and markets; its dynamics imply territorial and cultural aspects, and symbolic business. Therefore, Almaraz (2022) proposes to apply a multi-modal research model focused on collective dynamics, including the participation of all those actors connected to value chains and thereby understand the type of entrepreneurship, scaling, and innovation.

Likewise, the creation of capacities for innovation and entrepreneurship depends on the solution of structural problems and on the implementation disruptive strategies. First is to reduce the historical lags in education and the second is to strengthen the networks of socio-institutional collaboration with attractive and stimulating governance platforms for all the actors involved with the generation of innovation; furthermore, it should not be forgotten that scientific-technological research is the basis for the generation of innovations, and this has a causal relationship with the level of linkage between universities and other actors in the territory – social, productive, and public (Álvarez, 2020; Álvarez & Palacios, 2021). This *Handbook* considers that innovation is indeed a viable platform to create social, economic, and environmental value, despite the heterogeneous and unequal conditions in Latin America. However, the innovation process is complex, multifactorial, multitemporal, and multi-dimensional, limited by the socio-institutional arrangements of the system and the role of the public sector.

Open Debates: New and Old

What policies are required to promote innovation and entrepreneurship with a transformative approach and how to connect them (policies mix) through

democratic processes? In a sustained and responsible manner, to which markets is it necessary to direct productive diversification, beyond commodities? What are the public-private and private-public cooperation schemes that would promote equitable development with social justice? What are the dynamic capacities to strengthen these highly heterogeneous territories to be able to combine innovation, digital transformation, and a sustainability approach? What is the relevant dialogue process between scientific knowledge and vernacular knowledge? What are the adaptive capacities to develop to withstand complex dynamics? What type of innovation needs to be promoted in Latin America? What types of enterprises connected to the productive matrix of the region would make it possible to mitigate its historical gaps, which are becoming deeper? ... These questions are only a sample of those that are daily around the university cloisters.

It is relevant to emphasize Small and Medium Enterprises (SMEs) too that, despite being vulnerable to the dynamics of regional and global markets, continue ahead and still support national and regional economies. Public policies generally do not focus on SMEs to promote innovation but to achieve their subsistence. A greater capacity of local governments to foster innovation in SMEs and improve their conditions in the ecosystems to which they belong could reduce their vulnerability; they receive the highest impact confronting the markets and competition, including enterprises located in the social innovation context. Until now, the majority of both appear to be in a dead-end context.

The pandemic has brought new categories to the study of innovation, among others, gradual return, organizational agility, remote trust – an implicit but necessary category to consider –, social and informal collective enterprises, and increased intelligence. Latin American companies have a peculiar heterogeneous and unequal context; therefore, the practice of innovation and new collaboration approaches with universities – based on public-private and public-private approaches – are current issues. The study on the necessary reinstitutionalization of innovation policy based on digital transformation and environmental sustainability is a gap to fill in the literature, which will have to be accompanied by the development of new programs or instruments to strengthen collaboration based on technological and climatic approaches. Moreover, a theoretical basis for this new dynamic must be built from the characterization of the influences of technological patterns such as digital transformation, and then these patterns must be adapted to the geographical and regional reality to develop innovation capacities of the actors that offer and demand knowledge (Álvarez, 2020).

Other key issues for the study of innovation are the following: the mix of public incentives for innovation; the ideological questioning behind Science Technology and Innovation policies (STI); the diversification of the productive matrix of the region based on innovation and new financing mechanisms; new longitudinal and transversal methodological approaches to account for previously unidentified patterns of behavior; mission-oriented innovation and the role of the Entrepreneurial State are debates proposed by Mariana Mazzucato that are being discussed and successfully implemented in some specific contexts. The invitation is to debate about the importation of theories from the Western Hemisphere that lead to overcoming this eternal process of recurrence

(Montiel, 2021). The technological movement in Latin America became more dynamic with the COVID-19 pandemic. The need for companies to stay in the markets led to an expansion in the use of mobile devices, the Internet, and electronic commerce. It is imperative not to lose the positive paths that have been opened recently, to improve the conditions of equality of access to connectivity. Throughout this section, readers will find references to the main debates around innovation in Latin America, some of which add to the global discussions. Other discussions refer to recent processes and even those that are in progress and that from different ways of an innovative organization.

A new era must be born out of the present context, and from post-COVID-19 issues. Some innovation topics are necessary that they are addressed, researched, and analyzed to question not only its mechanisms but the ideology behind them. For instance, a comparative analysis between the different historic attempts on the design and implementation of Innovation and Entrepreneurship Ecosystems in Latin America could show the direct outcomes – micro, meso, macro – toward the economic systems in specific regions, moreover, its unintended and undesirable consequences (Sveiby, Gripenberg, & Segercrantz, 2012). This historical analysis could incorporate valuable insights on the genesis, the growth/degrowth, the diminution of territories and its dynamics, and the motivations and obstacles through time to understand the regional (and global) innovation debate. Those elements have been largely ignored in the past (not only in the academic arena) and could show “what is behind the curtains” of Latin America failure.

Finally, a highlighted idea was a sustainable long-term strategy that integrates diverse Latin American territories – probably, clustering them by specific industries or region’s core competencies – to create a supranational knowledge spillover value chain that forest the building of Latin America sustainability, and a promissory future for SMEs. The proposal is to transcend country-specific efforts and operationalize a common vision to Latin-American innovation.

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