

# Chapter 5

## Sustainable Development Challenges in Developing Countries: Can Technology Provide Inclusive Solutions?

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### ABSTRACT

*India is a country with a population of 1.2 billion and around 400 million poor people remain excluded from the formal economy. India does not offer a social security number for its residents. Rather, there exist variant forms of identification documents. In 2009, the Government of India initiated the Aadhaar project to create biometric technology-enabled unique identities for Indian residents. In a short timespan, the project has made remarkable progress by enrolling more than 600 million people. The objective of this paper is twofold: (1) to review the emerging literature on inclusive innovation and (2) to examine the case of Aadhaar Project in India, which aims to address the issue of poverty and inclusive development. Findings of the study reveal that the Aadhaar project has the potential to create an ecosystem of inclusive innovation and entrepreneurship, which can be beneficial for developing economies like India.*

### INTRODUCTION

India does not have something like the American Social Security Number and multiple forms of identity documents exist in India. India is a country of 1.2 billion where only 33 million pay taxes and 60 million possess a passport (Parker, 2011). There are millions of Indians who do not possess any form of identity proof and remain excluded from the formal economy. There is a growing stream of researchers who view inclusive innovation as a solution to this inclusion problem.

In literature, inclusive innovation is being proposed as an important and socially relevant concept. However, it is still in its nascent stage of conceptualization (George, McGahan & Prabhu, 2014; Foster & Heeks, 2013) and this paper is an attempt to add to the growing body of knowledge in this area.

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The objective of this paper is to first present a review of literature on inclusive innovation. The second objective is to study the case of Government of India's Aadhaar project using the lens of inclusive innovation. The paper presents a discussion of the Aadhaar project and its operations. The paper also explores the inclusive innovation ecosystem around the Aadhaar project and discusses its potential to address institutional voids in India.

## **BACKGROUND**

### **'Inclusive' Innovation**

Innovation literature has come a long way from Joseph Schumpeter's definition of innovation. Schumpeter defined innovation as producing new goods, production methods, sources of supply, and new organization of any industry (Fagerberg, Mowery & Nelson, 2006). Innovation is a widely used term having multiple definitions in literature. In general, it entails producing something new of commercial value. This definition is now being extended in the social realm and here it implies providing novel solutions to complex social problems.

Traditionally, innovation recognizes development as generalized economic growth. In contrast, inclusive innovation views development as active inclusion of people excluded from the mainstream development. The difference refers to the inclusion involving some aspect of innovation for/by the marginalized groups (Foster & Heeks, 2013).

The first objective of this study was to review the emerging literature on inclusive innovation and summarize key conceptualizations. A search using keywords "inclusive" and "innovation" in major e-Databases like Proquest and Ebsco resulted in only six relevant peer reviewed journal papers. Few of these papers attempted to put forward definitions of inclusive innovation. Further, I expanded the search on definitions to include published reports and conference papers. A list of definitions on inclusive innovation is presented in Table 1.

*Table 1. Definitions of inclusive innovation in literature*

George, McGahan & Prabhu (2012)	"Inclusive innovation as the development and implementation of new ideas which aspire to create opportunities that enhance social and economic wellbeing for disenfranchised members of society."
Foster & Heeks (2013)	"Inclusive innovation is the means by which new goods and services are developed for and/or by the billions living on lowest incomes."
Mashelkar (2012), Global Research Alliance	"Inclusive innovation is any innovation that leads to affordable access of quality goods and services creating livelihood opportunities for the excluded population, primarily at the base of the pyramid, and on a long term sustainable basis with a significant outreach."
Paunov (2013), OECD Report	"Inclusive innovation... harnessing science, technology and innovation know-how to address the needs of lower-income Groups."
Heeks, Amalia, Kintu, & Shah (2013)	"Inclusive innovation... is the means by which new goods and services are developed for and/or by those who have been excluded from the development mainstream; particularly the billions living on lowest incomes. "

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