[[1]](#footnote-1)

An Investigation into

Sustainability Oriented Innovations

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***Abstract*-** Sustainability Oriented Innovations (SIs) are innovations commercialized by firms that lead to improvements in economic, environmental and social wellbeing. Developing an understanding on SIs is important because of their ability to reverse and reduce the negative impacts of economic activities on environment and society, referred to as costs of development, without compromising growth.

Often, the literature treats sustainability oriented innovations, eco-innovations, environmental innovations and green innovations as synonymous. The synonymy is not without dissention. Further, such a treatment implies an incomplete measurement of SIs if only their environmental performance is measured. I derive a nuanced relationship between sustainability oriented innovations, eco-innovations, environmental innovations and green innovations, propose a working definition of SIs based on this nuanced relationship and validate it.

Conforming to the distinction between potential eco-innovations and eco-innovations highlighted in literature, it is rationally possible for all innovations to begin as potential innovations. I categorize innovations that have the potential to lead to economic, environmental and social improvements as potential sustainability-oriented innovations (PSIs) which may get transformed to SIs when they are successfully commercialized, adopted and diffused.

The focus of this work is to understand the transformation of PSIs to SIs. Since each innovation has multiple dimensions, and differs from others in many ways, I study this process by examining three specific organizations trying to commercialize innovations that have the potential to lead to economic, social and ecological sustainability. The first case examines Power Tech Company (PTEC) which was involved in the commercialization of renewable off-grid power generation and distribution innovations in rural India. The second case studies the commercialization of bio-digester toilets by Bio-Toilets Pvt. Ltd.[[2]](#footnote-2) (BTPL). The third case study narrates the commercialization of cab hailing application by Uber in India.

The case narratives revealed that the firm operates in a dynamic environment and uses business models to adapt to the resulting changes. Doing so, keeps it economically viable as it is able to respond to the demand which is an outcome of the interaction of the economic, ecological and social systems, within which it operates. While doing so, the firm may end up delivering on both environmental and social sustainability for a PSI. To make itself economically viable, the firm can either scale up or replicate its model in other markets or consumer segments which is one way of PSIs transforming to SIs. Another way in which this transformation may occur is through the increase in the imitation and adoption of the artefact (innovation) and business model combination by others increasing its reach and inducing its eventual diffusion beyond a critical mass.

The micro aspects of this process have encouraged me to look at the Institutional Analysis and Development (IAD) framework as a means to understand the transformation of PSIs to SIs. At the same time, a co-evolutionary NIS framework helps capture the dynamics of the institutional context. Thus, I propose a theoretical framework that draws from both the co-evolutionary NIS and the IAD, moving beyond the macro relationship between institutions and SIs, as an outcome of the simultaneous engagement of literature and analysis from the three case studies. The applicability of this framework is tested by applying it to the three different organizations studied which vary in their scale of commercialization of PSI(s).

1. [↑](#footnote-ref-1)
2. The identities of Power Tech Company and Bio-Toilets Pvt. Ltd. have been masked [↑](#footnote-ref-2)