

# Chapter 3

## Determinants and Outcomes of Green Innovations: A Conceptual Model

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### **ABSTRACT**

*Green innovation (GI) refers to an invention that simultaneously benefits the environment and customers. Academics and policymakers have recently focused on GI to understand how innovation and sustainability interact. Indeed, governments and non-governmental organizations pressure businesses to abandon “traditional environmentally harmful products” in favor of green products (GPI) and green process innovations (GPrI). GI research has attracted the attention of many scholars, adopting diverse perspectives, but there has been a lack of publications on the green process and green product innovation (GPI) together. In this way, the current study conducts a literature review and bibliometric analysis to evaluate the “literary corpus” on GI and its various forms. The research provides a comprehensive understanding of GI’s various determinants and outcomes. Managers and policymakers can also benefit from the most recent research findings to gain a better understanding of key determinants and outcomes.*

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## INTRODUCTION

In the modern world, firms are mainly concerned with protecting the environment and managing the consequences of energy shortages, as well as with customers' greater understanding of "environmentally friendly products" and environmental pollution (Taoketao et al., 2018; Yin et al., 2018). Any new "practice introduced into an organization, including equipment, products, processes, policies, and projects" is considered innovative. Hence, this context pushes companies toward green innovation (GI) (Du et al., 2018; Wang, 2019). The active participation of firms in GIs reduces negative environmental effects, while increasing production and improving organizational status and corporate performance as well as competitiveness (Chen et al., 2006). GI has gained popularity in academic and political circles in recent years due to the passage of "remedial legislation" in several countries to avoid or mitigate adverse environmental impacts (Boons & Lüdeke-Freund, 2013). Indeed, earlier studies have recognized the importance of GI in growing businesses (Chiou et al., 2011; Lin et al., 2013; Tseng et al., 2013; Gao et al., 2020 Zhao, X., & Bai, X. 2021). Many empirical studies use a single criterion to assess GI, but have not distinguished between green product innovation (GPI) and green process innovation (GPrI) (Chen et al., 2012; Song & Yu, 2018; Sun & Sun, 2021). Many researchers have studied GPI (Andersén, 2021; Awan et al., 2021b; Peters & Buijs, 2022; Song et al., 2020; Serrano-García et al., 2021) and process innovation (Achi et al., 2022; Xie et al., 2022; Zameer et al., 2021; Khan et al., 2021), in various studies, with some notable exceptions considering both in combination (Armbruster et al., 2008; Awan et al., 2021a; Kivimaa, 2007; Stucki et al., 2018; Wagner, 2008; Wang et al., 2021; Yang & Roh, 2019). Considering that GI has a greater degree of complexity than conventional innovations, because it requires more specialized skills to activate processes of exchange as well as the sharing of knowledge from the outside to overcome the technological and cognitive gap, this study provides a comprehensive overview of GI (Gupta & Thomas, 2019). Although earlier evaluations of the literature have increased the knowledge about the subject, a full examination of the research on the determinants and outcomes of green products and process innovation remains lacking.

Despite the fact that numerous research studies have been conducted on the determinants and consequences of green processes or products, this chapter tries to fill the gap in the literature by providing a comprehensive review of these analyses to improve conceptual clarity. The main objective is to systematize and classify the literature on GI by combining both GPI and GPrI. The following research questions are reviewed in this research:

**Research Question One:** Which themes have been studied in the GI research that can be observed by performing a conceptual structure map?

**Research Question Two:** What research contexts have been studied in terms of GIs that can be evaluated by performing a bibliometric analysis (assessing the most productive sources of publications, as well as country and annual scientific production)?

In this way, this chapter tries to identify the main key constructs based on the antecedents and results of GPI and GPrI. Therefore, this study offers a conceptual model as well as practical implications, improving the understanding of how GIs can ultimately impact society and business.

The chapter is structured as follows: first, the literature review defines GI and its different types. The next section explains the methodology. Following that, a bibliometric analysis of previous studies in GI is performed and a conceptual model based on the output is proposed. Finally, the conclusion discusses the primary theoretical and managerial inferences, as well as possible directions for future research.

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