

# Impact of Corporate Social Responsibility, Green Intellectual Capital, and Green Innovation on Competitive Advantage: Building Contingency Model

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## ABSTRACT

The concept of green intellectual capital has gained substantial popularity in the context of pressures from competition, environmental forces, and mounting stakeholders' expectations for environmental protection. Scholars have investigated the antecedents and consequences of green intellectual capital. However, those investigations look inexhaustive in terms of the research frameworks and contexts employed therein. Based on the systematic literature review, this paper builds a better model involving both antecedents and consequences of green intellectual capital. The model proposes that corporate social responsibility is a factor leading to green intellectual capital. Additionally, green intellectual capital leads to green innovation resulting in competitive advantage for firms. Importantly, the model acknowledges contingency theory and suggests that the relationship between corporate social responsibility and green innovation could be moderated by the extent to which a firm is visible to the general public for its activities as well as the extent to which the firm is transparent.

## KEYWORDS

Competitive Advantage, Corporate Social Responsibility, Green Innovation, Green Intellectual Capital

## 1. INTRODUCTION

In new world of business, green consumerism and green management have turned out to be momentous issues. Customers in developed economies in particular, support eco-friendly consumption driving companies to develop environmental concerns and produce eco-friendly products, thus making green management a profitable strategy (Saha, 2017; Solvalier, 2010). Under the institutional based view, companies operating in developed and fast paced developing countries need to conduct environmental protection activities for satisfying international regulations regarding environment protection, green products, and green consumerism (Chen, 2008). In those contexts, green management and social responsibility are universal concepts for all industries and sectors. In information and communications technology (ICT) sector as well, these concerns have gained momentum. IT professionals and developers are now expected to develop the devices that are energy efficient (Pattinson, Oram, & Ross, 2011). In this connection, a new area of Green information technology (GIT) has developed. GIT is about properly using information and communication technologies to address environmental issues and attain business sustainability (Przychodzen, Gómez-Bezares, & Przychodzen, 2018). It involves making green products and devices having optimum energy related performance as well

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as causing a change in other organizational activities. For instance, for former, the examples would include virtualization and desktop power management. For the later, it could be indicated through smart buildings and virtual conferencing activities (Pattinson et al., 2011). Experts suggest that various stages in the IT life cycle carry particular environmental concerns. Molla, Abareshi, and Cooper (2014) argue that such environmental concerns could be about CO<sub>2</sub> emissions, energy inefficiency, and electronic waste. They added that recycling, reusing, and increasing the lifetime of IT related equipment for lowering electronic waste, decreasing paper consumption, and conserving energy could be considered pro-environmental IT practices. Use of soft data for information dissemination, relying on compact discs instead of paper, powering off the computers in idle mode, and reducing screen brightness are some of green IT practices. Technically, these environmental concerns could be addressed by companies through possession of capable resources, assets, and competences potential enough to deliver value. Scholars claim that in the current era of knowledge economy, intangible assets like intellectual capital has become a source of competitive advantage for the companies (Chang & Chen, 2012; Chen, 2008; Gupta & Raman, 2021). Organizations have learnt that other than reducing costs and creating differentiation in their products, emphasis on the human capital is important to develop and sustain competitive advantage (Preve, 2012).

A substantial volume of empirical research is available on intellectual capital, its determinants, and consequences (Baima, Forliano, Santoro, & Vrontis, 2020; Bisogno, Dumay, Rossi, & Polcini, 2018; Gupta & Raman, 2021). Importantly, in the wake of dominant issues like corporate social responsibility, green management, and green consumerism, novel construct of “green intellectual capital” suggested by Chen (2008) is gaining popularity and attention of researchers. Chang and Chen (2012) suggested that corporate social responsibility and environmental consciousness serve as determinants of green intellectual capital. Technically, an organization possessing an environment conscious culture and having proper policies for addressing corporate social responsibility would build greater green intellectual capital. Similarly, the literature review about consequences of green intellectual capital indicates that it could result in green social capital and green innovation (Delgado-Verde, Amores-Salvado, Martín-deCastro, & Navas-Lopez, 2014). This could ultimately help companies produce strong competitive advantage and high business sustainability (Chen, 2008; Huang & Kung, 2011; Nanath & Pillai, 2017; Omar, Yusoff, & Zaman, 2017; Rezaei, Izadi, Jokar, & Rezaei, 2016; Yahya, Arshad, & Kamaluddin, 2015). These findings provide basis for developing serial mediation model for green intellectual capital.

Moreover, since corporate performance, competitive advantage, and business sustainability could be determined by several factors, therefore, keeping in view nature of variables related to green intellectual capital, this study relies on contingency theory to suggest the role of moderating variables on various relationships in the model. Scholars have suggested that certain variables like stringency of regulations, environment normative level, and environmental dynamism could be possible moderators between green innovation and competitive advantage or business performance (Aguilera-Caracuel & Ortiz-de-Mandojada, 2013; Chan, Yee, Dai, & Lim, 2016). Similarly, Wu, Liu, Chin, and Zhu (2018) recently suggested that public visibility and firm transparency could moderate the relationship between corporate social responsibility and green innovation. Overall, the literature review leads to the problem statement that no previous study regarding the analyses on green intellectual capital has covered the leading mediators and moderators all together in the same research framework. Therefore, this study has developed a better and enriched conceptual model for filling this research gap and studying green intellectual capital, and has contributed to the body of knowledge through that model. An empirical test of this model would add to the understanding on antecedents and consequences of green intellectual capital in much better way compared to those of past studies. The paper presents various propositions based on review of past studies and underlying theories and guides future empirical research on green intellectual capital.

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