

# Environmental Innovation, Firm Value, and Long-Term Managerial Incentives: Evidence for Integral Ecology

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## Keywords:

Environmental innovation, Firm value, Executive compensation, Sustainability.

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# **Environmental Innovation, Firm Value, and Long-Term Managerial Incentives:**

## **Evidence for Integral Ecology**

### **Abstract**

We study the impact of environmental innovation on firm value and, by implication, the potential of using financial incentives to motivate managers to pursue environmental innovation. In doing so, we provide evidence relevant to integral ecology in business by examining how managerial incentive design can support long-term environmental innovation within firms. Environmental innovation presents unique challenges that can undermine traditional pay-for-performance schemes, potentially penalising early-stage failures. We identify three distinctive features of environmental innovation: a high likelihood of early-stage failure, resource stickiness constraints, and the long time it takes for markets to recognise the intangible value of innovation. Incorporating these features into our model, we empirically examine the relationship between environmental innovation and firm value. To address the limitations of patent-based proxies, particularly their restricted cross-country comparability, we use Refinitiv's environmental innovation score. This measure captures multiple dimensions of innovation, including green product development, environmental R&D, and green revenues. Using an international dataset, we find that sustained improvements in environmental innovation can enhance firm value, as reflected in market-to-book and Tobin's Q ratios. Furthermore, our evidence indicates that investors' response to a positive long-term change in environmental innovation is facilitated through a risk-mitigation channel. These findings suggest that long-term equity-based incentives, such as stock options with long vesting periods, may effectively encourage managers to engage in environmental

innovation. Our findings may be of interest in discussions on sustainable business and integral ecology.

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