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Information Technology Investment and Commercialized Innovation Performance: Dynamic Adjustment Costs and Curvilinear Impacts

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Abstract

A firm's investment in information technology (IT) has been widely considered as a key enabler of innovation. In this study, we intend to integrate prior findings for augmenting pathways (whereby IT investment supports innovation) with a new theory for suppressing pathways (whereby dynamic adjustment costs associated with IT investment can be detrimental to innovation) to propose an overall inverted U-shaped relationship between IT investment and commercialized innovation performance (CIP). To test our theory, we analyzed a unique panel dataset from the largest economy in Europe and discovered a curvilinear relationship between IT investment and CIP for firms across a broad spectrum of industries. Our research presents empirical evidence corroborating the augmenting and suppressing pathways linking IT investment and CIP. Our findings can serve as a cautionary signal to executives, discouraging overinvestment in IT.

Keywords: Information technology investment; business value of information technology; commercialized innovation performance; dynamic adjustment costs; overinvestment; digital innovation; curvilinear relationships