

The Influence of Absorptive Capacity on Process Innovation: An Exploratory Study in Seven Leading and Emerging Countries

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Abstract : This empirical study answer calls for research on Absorptive Capacity and Process Innovation. Due to the fourth industrial revolution, manufacturing companies face the biggest disruption of their production processes since the rise of advanced manufacturing technologies in the last century. Therefore, process innovation will become a critical task to master in the future for many manufacturing firms around the world. The general ability of organizations to acquire, assimilate, transform, and exploit external knowledge, known as Absorptive Capacity, was proven to positively influence product innovation and is already conceptually associated with process innovation. The presented research provides empirical evidence for this influence. The findings are based on an empirical analysis of 732 companies from seven leading and emerging countries: Brazil, China, France, Germany, India, Japan, and the United States of America. The answers to the survey were collected in February and March 2018 and addressed senior- and top-level management with a focus on operations departments. The statistical analysis reveals the positive influence of potential and Realized Absorptive Capacity on successful process innovation taking the implementation of new digital manufacturing processes as an example. Potential Absorptive Capacity covering the acquisition and assimilation capabilities of an organization showed a significant positive influence ($\beta = .304$, $p < .05$) on digital manufacturing implementation success and therefore on process innovation. Realized Absorptive Capacity proved to have significant positive influence on process innovation as well ($\beta = .461$, $p < .01$). The presented study builds on prior conceptual work in the field of Absorptive Capacity and process innovation and contributes theoretically to ongoing research in two dimensions. First, the already conceptually associated influence of Absorptive Capacity on process innovation is backed by empirical evidence in a broad international context. Second, since Absorptive Capacity was measured with a focus on new product development, prior empirical research on Absorptive Capacity was tailored to the research and development departments of organizations. The results of this study highlight the importance of Absorptive Capacity as a capability in mechanical engineering and operations departments of organizations. The findings give managers an indication of the importance of implementing new innovative processes into their production system and fostering the right mindset of employees to identify new external knowledge. Through the ability to transform and exploit external knowledge, own production processes can be innovated successfully and therefore have a positive influence on firm performance and the competitive position of their organizations.

Keywords : absorptive capacity, digital manufacturing, dynamic capabilities, process innovation

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