

The Hong Kong Polytechnic University
Department of Logistics and Maritime Studies
Research Seminar

Two Essays on Risks and Returns in Operations Management

By

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Venue: M714, Li Ka Shing Tower
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(Conducted in English)

Abstract:

In the first study, we examine the impact of R&D investments on the financial risks of firms and explore how firms could mitigate these risks through operational improvements (using the stochastic frontier estimation of relative efficiency as a proxy) and quality management initiatives (using Six Sigma implementation as a proxy). Based on data from 560 manufacturing firms from 2007 to 2014 in the U.S., we construct the distributed lag model to capture the current-year and 1-year lag effects of R&D investments on firm risks. Using the system generalized method of moments estimator (GMM) with a 1-year lag, we find that R&D investments significantly increase a firm's financial risks. However, we find that the risks are alleviated when a firm simultaneously invests in operational improvements or quality management. We argue that R&D investments improve a firm's explorative capacity while investments in operational improvements and quality management enhance a firm's exploitative ability. Instead of considering exploitative and explorative as competing, mutually exclusive capabilities, our empirical evidence shows that exploitative and explorative capabilities reinforce each other to mitigate the risks associated with R&D activities, which leads to lower financial uncertainties in regard to R&D investments. The second study is related to the adoption of business intelligence (BI) systems. Through a sample of 270 manufacturing firms in the U.S. that adopted BI systems from 2005 to 2014, we examine the impact of BI systems on firms' operational efficiency and firm risks. We find that firms improve their operational efficiency and reduce risks in profit returns directly after the adoption of BI systems. We further find that firms with superior stakeholder relationships and higher process institutionalization (i.e., ISO 9000 certified) gain more benefits from the adoption of BI systems. We examine the impact of BI systems on both efficiency improvements and risk reductions, and explore the circumstances under which firms are more likely to obtain benefits from BI adoption.

Bio:

Daphne Yiu is a Ph.D. candidate in the Department of Logistics and Maritime Studies, The Hong Kong Polytechnic University. Her research interest is empirical research in operations and technology management, currently using panel data and statistical analysis.

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All are welcome!