Measuring the Operating Efficiency of Internet Channels Using the Two-Stage DEA Approach

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Abstract

The emergence of the Internet has prompted many firms to explore it as a new form of distribution channels. However, few empirical studies have undertaken a comprehensive evaluation of Internet channels or provided direct evidence of their performance implications. This present research proposed a conceptual model based on the Technology-Organization-Environment framework and adopted a two-stage approach, combining Data Envelopment Analysis with Tobit regression, to investigate the operating efficiency and determinants of Internet channels. Empirical data were collected from the financial services sector in Taiwan. The results of the first stage demonstrated the existence of large inefficiencies. To help improve the performance of inefficient firms, this study provides guidelines on how to allocate resources and operate at the right size. The second-stage findings show that Internet channel power, firm size, Internet channel-demand growth, and market share are important determinants in explaining efficiency levels of Internet channels. In conclusion, this study offers valuable information for managers to guide marketing channels toward superior performance.

Keywords: Internet channels, data envelopment analysis (DEA), tobit regression; performance evaluation, technology-organization-environment framework