Stability of I-O technical coefficients by capacity utilization: A case study of the hotel sector in Taiwan

Topic: Input-output studies of tourism issues II
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An increasing number of economic impact studies are performed to address special tourism demand conditions such as hosting mega event/ festival or faced with extreme weather, disease outbreaks or terrorist activities. Commonality of these scenarios is that it involves short-term or irregular large-scale demand fluctuation from the baseline point. The adjustment of the I-O coefficient to reflect the cost structure under different demand level is deemed as more critical for the Input-Output analysis. The purpose of this research therefore is to investigate the stability of cost structure by capacity utilization in the tourism industry, using the accommodation sector in Taiwan as an example. Panel data consisting of firm level hotel financial information based on 13 individual cost categories from year 2000 to 2008 is obtained through Taiwan Tourism Bureau. Panel data analysis is performed to reveal the magnitude and direction of cost structure changes with respect to occupancy rate. For a 10% increase in occupancy from the baseline of 65% occupancy, the intermediate input to sales ratio will decrease from 0.483 to 0.473 while the profit to sales ratio will increase from 0.082 to 0.139, and the employee benefits to sales ratio will decrease from 0.335 to 0.301 for per dollar of final sales. This pattern implies a slight reduced type I sales multipliers and a substantial reduced type II multipliers under a tourism event or festival as the requirement of intermediate input and personal income does not increase proportionally in relation to hotel revenue. On the contrary, a higher type I and type II multipliers can be expected from the standard I-O model during the tourism downtime as a greater proportion of per dollar revenue is allocated to the inter-industry material, service and employee benefits.