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**PANEL DATA ANALYSIS OF HOSPITAL EXPENDITURE:
A CASE STUDY OF 27 CATHOLIC HOSPITALS IN UGANDA**

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Abstract

Although considerable literature provides econometric estimates of hospital cost functions in developed countries, relatively little is known about what drives variations in total hospital costs across resource-poor countries. Therefore, policies derived from studies outside the context of resource-constrained countries are likely to be misleading. The purpose of this study was to assess the appropriateness of the aggregate measure of hospital output used by the Uganda Catholic Medical Bureau (UCMB). The other aim was to investigate how certain health or administrative interventions explain the variations of hospital total cost, such as average length of stay, occupancy rate, proportion of qualified staff, average monthly salary of staff, location and teaching status of a hospital. It was also the aim of the study to establish whether economies of scale and scope exist.

The study estimated a short-run multiple-output hospital cost function using a panel data technique with data from 27 hospitals under the UCMB in the period 1998 – 2008. The estimation results indicate that the one aggregate measure used at the UCMB is not acceptable. The findings revealed that total annual hospital expenditure is positively related to hospital output, average monthly salary of staff, and average length of stay. On the contrary, the results showed that annual expenditure was negatively related to bed occupancy rate and the proportion of qualified staff employed. It was established that hospitals with teaching facilities and those within urban centres spent more than hospitals without teaching facility and located in the rural setting, respectively. Also, the analysis exhibited that hospitals have significant economies of scale and scope.

This study provides imperative insights into the determinants of hospital costs and the need to examine allocative efficiency so as to re-define the composite output index employed by the UCMB. There is need as well, to consider exploiting the existing economies of scale, and the advantage of saving cost by employing a larger proportion of qualified staff.

Key words. Panel, hospital cost function, aggregate measure, economies of scale, Uganda