An Input-Output Approach to Analyzing the Relative Influence of Journals: The case of Process Integration journals

K.D. Yu*, K. Aviso2, M.A.B. Promentilla1, A. Chiu2, R.R. Tan2

1DLSU, Philippines  
2De La Salle University, Philippines

Abstract

A journal’s influence is commonly measured through well-known metrics such as the h-index, Impact Factor (IF), and Source Normalized Impact per Paper (SNIP); many new metrics have emerged in the recent years to quantify the hierarchy among journals in a given discipline. However, a measure including the interdependence among journals through the article reference and citations has not been designed. Interdependence among journals is important to gauge the influence of journals as a source of knowledge or as an avenue for communicating new developments. In this paper, an input-output network model is proposed to quantify the interdependencies that exist in a given cohort of journals. This method yields measures derived from indices used with input-output models in other domains (e.g., economic modelling) that quantifies a journal’s influence relative to other journals in the same cohort. This approach is illustrated using publication and citation statistics from four journals that have been regularly associated with PRES. Results show that journals may have high citation ratings but they may not necessarily have a strong influence in driving scientific discussion in other journals.