

GRAPH THEORETICAL APPROACH TO BANKRUPTCY PREDICTION OF RETAILERS

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ABSTRACT

This paper examines the applicability of a graph theoretical approach to bankruptcy prediction and assessment of financial health of retailers. A sample of 49 retailers are selected for study. Six financial ratios that are considered to be key performance measures of retailers are identified from a literature review. The interactions of these financial ratios are converted into an adjacency matrix and the matrix permanent is calculated as an index of a retailer's financial health. The comparison of financial health indices derived from the graph theoretical approach with Altman Z-scores demonstrates a high level of the applicability of the graph theoretical approach to bankruptcy prediction of retailers.

Keywords: *Graph theory, matrix permanent, bankruptcy prediction, financial health, retailers*