Operations Research Applications in Audit Planning and Scheduling

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Abstract : This paper presents a state-of-the-art survey of the operations research models developed for internal audit planning. Two alternative approaches have been followed in the literature for audit planning: (1) identifying the optimal audit frequency; and (2) determining the optimal audit resource allocation. The first approach identifies the elapsed time between two successive audits, which can be presented as the optimal number of audits in a given planning horizon, or the optimal number of transactions after which an audit should be performed. It also includes the optimal audit schedule. The second approach determines the optimal allocation of audit frequency among all auditable units in the firm. In our review, we discuss both the deterministic and probabilistic models developed for audit planning. In addition, game theory models are reviewed to find the optimal auditing strategy based on the interactions between the auditors and the clients.