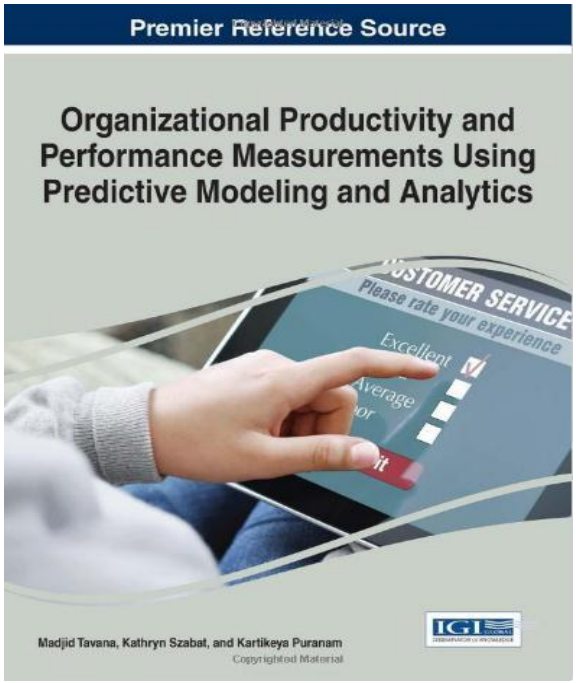

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Organizational Productivity and Performance Measurements Using Predictive Modeling and Analytics (Advances in Business Information Systems and Analytics)

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Chapter 4

An Analytical Algorithm for Delphi Method for Consensus Building and Organizational Productivity

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ABSTRACT

The Delphi technique is being increasingly used in many complex areas where a consensus is to be reached. In such an environment, the Delphi technique allows researchers to acquire high quality, unbiased information from a panel of certified experts. Despite its vast uses, the Delphi method has seen a lack of consistent procedural guidance for its application. A review of literature revealed a significant variation in methodological approach of the method. The purpose of this paper is to develop a practical algorithm for the Delphi study application based on the literature review and the authors' practiced experiences. A few modifications are suggested to make the Delphi study more practical in research and decision making. Using the guidelines provided by this paper, it is expected that the reader may better understand the appropriate application and procedure of the modified Delphi process.

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INTRODUCTION

The Delphi technique is being increasingly used in many complex areas where a consensus is to be reached (Chan, 2002). Norman Dalkey of the RAND Corporation developed the original Delphi concept in the 1950's for a United States Air Force sponsored project. The goal of the project was to solicit expert opinions, from the view point of a Soviet strategic planner, of an optimal USA industrial target system and to the estimation of the number of A-bombs required to reduce the munitions output by a prescribed amount (Dalkey & Helmer, 1963). In academic research, the Delphi concept is particularly useful for highly controversial or multi-dimensional subjects such as technological, economic, sociological or medical (Derian & Morize, 1973). In other words, the Delphi study is well suited as a research instrument when there is incomplete knowledge about a problem or phenomenon where there are no 'correct' answers (Skulmosti et al., 2007; Paliwoda, 1983). Hanafin et al. (2007) and Linstone (1978) viewed that the method is particularly well suited to highly complex problems in which: