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Chapter 4

A New Approach to Evaluating Business Ethics: An Artificial Neural Networks Application

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Stimulated by recent high-profile incidents, concerns about business ethics have increased over the last decade. In response, research has focused on developing theoretical and empirical frameworks to understand ethical decision making. So far, empirical studies have used traditional quantitative tools, such as regression or multiple discriminant analysis (MDA), in ethics research. More advanced tools are needed. In this exploratory research, a new approach to classifying, categorizing and analyzing ethical decision situations is presented. A comparative performance analysis of artificial neural networks, MDA and chance showed that artificial neural networks predict better in both training and testing phases. While some limitations of this approach were noted, in the field of business ethics, such networks are promising as an alternative to traditional analytic tools like MDA.

Stimulated by the proliferation of incidents such as tax evasions, defense contractor scandals, insider trading, golden parachutes, executive salaries and bonuses and the savings and loan fiasco, concerns about business ethics have increased significantly over the last decade. Consequently, practitioners and academics are showing increased interest in ethical issues in business. Businesses are updating codes of ethics. Academics are authoring an increasing number of research articles and books.

Research studies have focused on developing theoretical and empirical foundations for understanding the ethics of decision making. Empirical

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studies have used traditional quantitative analytic tools such as multiple regression and multiple discriminant analysis to investigate ethical issues. The present research considers a new procedure, artificial neural networks (ANNs), to analyze ethical decision data. It investigates whether ANNs can outperform discriminant analysis in understanding ethical dilemmas. This comparative test uses ethical judgment data obtained from college students. Using ANNs and discriminant analysis, relationships between these factors and attitudinal variables are assessed.

Several studies of ethical decision making are summarized next. A short presentation of ANNs and discriminant analysis used in analyzing students' ethical perceptions follows. Then, the results of the empirical test are presented along with a discussion of implications. Concluding remarks, including suggestions for future research, complete the paper.

LITERATURE REVIEW

As stated earlier, both public and scholarly interest in business ethics have increased significantly over the past decade (Vogel, 1991). In the next few paragraphs, some recent empirical work in business ethics is reviewed. Empirical work is emphasized in this study because of its centrality to the present research.

This review of empirical studies focuses on business students' and practitioners' judgments regarding ethical issues. For example, DePaulo (1987) examined students' perceptions of the incorrectness of sellers' deceptive bargaining tactics. Interestingly, students were more critical of sellers than were buyers. Claypool, Fetyko and Pearson (1990) compared the responses of CPAs and theologians to ethical dilemmas. When faced with potential ethical dilemmas, both groups indicated that the concepts of "confidentiality" and "independence" were more consequential than "seriousness of breach" and "recipient of responsibility."

Stanga and Turpen (1991) investigated judgments of male and female accounting students on ethical situations relevant to accounting practice. They found no significant gender differences in ethical judgments. Using a nationwide sample of small business employees, Serwinek (1992) investigated the effects of demographic variables such as age, gender, marital status, education, dependent children status, region of the country and years in business on ethical perception. Age was found to be the most significant factor in predicting ethical perception. Premeaux and Mondy (1993) used marketing managers to investigate the link between ethics and management behavior. The authors established that, even with recent heightened concerns for ethical issues in business, this link has not changed much since the mid-