

Developments In Business Simulation & Experiential Exercises, Volume 19, 1992

INSIGHTS INTO ETHICAL DECISION MAKING ACTIVITIES AND ORGANIZATIONAL PERFORMANCE: A MANAGEMENT SIMULATION ANALYSIS OF COLLEGE STUDENTS AND MANAGERS

Daniel F. Jennings, Baylor University
Tammy G. Hunt, University of North Carolina at Wilmington
Paul D. Cretien, Baylor University

ABSTRACT

This empirical study examines the relationship between organizational performance and the ethical conduct of managers. Professional managers and college students participated in a management simulation, providing a rich, realistic, yet controllable environment to observe the relationships between ethics and team performance. Hypotheses tested ethical decision making against team financial performance, environmental conditions, team age, and team type. Three of five hypotheses were supported.

INTRODUCTION

What is the relationship between performance and the ethical conduct of organizational managers? While ethics has been studied for centuries (Bentham, 1789), the first empirical research on ethical beliefs and behavior in business organizations was conducted by Baumhart (1961) nearly thirty years ago. The decade of the 1980s saw an avalanche of articles published dealing with the issue of business ethics (Randall and Gibson, 1990). Kahn (1990), Randall and Gibson (1990), and others have called for management researchers to leave behind the simplistic case studies and the reporting of percentages and rankings of individual's ethical attitudes, and begin linking ethics more with organizational performance using bivariate and multivariate statistical tests.

Our purpose for this paper is to investigate the relationship of ethical decision making activities to team performance, environmental conditions, team type, and team age utilizing decisions made by professional managers and college students participating in a management simulation exercise. We test for effects of team characteristics on ethical choices and also examine whether managers and college students differ in their level of ethical decision making. The paper will present past literature and research hypotheses, research methodology, data analysis, and conclude with a discussion section.

HYPOTHESES

Hosmer (1987) argued that the current strategic planning systems used by many firms emphasize improvements in competitive positions. According to Hosmer, these systems categorize poorer performing divisions as a potential for liquidation or sale. When a division finds itself in this position, there is a great incentive for its management to take short-term actions to save itself--actions, which might be unethical or are directly contrary to the moral standards, either explicit or implied, of their organizations.

Lemke and Schminke (1989) using a management simulation exercise involving college students reported that declining organizations have a greater propensity for unethical behavior, and suggest that those firms doing the most poorly will be the least ethically inclined. A number of studies have reported that firms cited for illegal activities performed less well than other Fortune 500 firms in the five years preceding the citation (Mitroff and Kilmann, 1977; Staw and Szwajkowski, 1975; Szwajkowski, 1985). Therefore, following Hosmer's (1987) argument that poorer performing firms will tend to make the most unethical decisions, the following hypotheses are offered:

- H 1: High-performing teams will tend to make the most ethical decisions.
- H2: Low-performing teams will tend to make the most unethical decisions.

Lacznik (1983) reported that profit center managers tended to make ethical decisions on the basis of its consequences. Fritzsche and Becker (1984) found that managers of poorer performing firms facing increased competitive pressures tended to make more unethical decisions. Staw and Szwajkowski (1975) argued that managers will tend to make more unethical decisions when facing an environmental shift from munificence to scarcity. Covin and Covin (1990) noted that with respect to the competitive orientation of top managers of small firms, behavior differences occur during periods of environmental hostility to the extent that some managers take the posture to "undo" the competitors at all costs, including exhibiting unethical behavior. Accordingly, the following hypothesis is offered:

- H3: The teams' second ethical decision will tend to be more unethical than the first ethical decision.

Longenecker, McKinney, and Moore (1989) reported that younger respondents were significantly more permissive in their views regarding ethics in a wide variety of situations. Bloom (1987) argued that there is a societal shift away from well-defined values. Relativism has been increasingly taught, under the guise of tolerance, to recent generations of students according to Bloom. Waters and Bird (1987) also found a greater ethical laxness among younger managers and professionals in business. Based on this evidence, we propose the following hypothesis:

- H4: Younger age teams will tend to make the most unethical decisions.

Wood, Longenecker, McKinney and Moore (1988) reported that college students were significantly more willing to engage in questionable behavior than were their professional counterparts. These researchers indicated that many students were willing to do whatever was necessary to further their own interests, with little or no regard for fundamental moral principles. DeConinck and Good (1989) found a highly significant difference between the ethics of students and sales management personnel with managers indicating a greater concern for ethical behavior than students.

Developments In Business Simulation & Experiential Exercises, Volume 19, 1992

They concluded that students either are more willing to violate standard codes of behavior, or they are unsure of potential outcomes of such behavior. Following these research findings, this hypothesis is offered:

H5: Student teams, as compared with manager teams, will tend to make the most unethical decisions.

RESEARCH METHODS

Data Collection

The data for this study was collected from both college students in a strategic management and business policy course at a southwestern university and from professional managers attending executive development programs at southwest, eastern, and west-coast locations.

Subjects

Students in five strategic management classes occurring over a three-semester period participated in the study. All semesters involved day program undergraduates. Mid-level managers in three different geographical locations also participated in the study. The total number of groups included in the study was 113 (72 student and 41 manager teams).

Student classes were divided into management teams of three to four students with each team operating a pharmaceutical firm. Eight total decision iterations were run over a twelve-week period. Fifteen percent of the students' grade for the course depended on various aspects of the simulation.

Mid-level managers were divided into management teams of three to six individuals with each team also operating a pharmaceutical firm. Four total decision iterations were performed over a three-day period. Each team had to present an oral report before their peers describing their performance on various aspects of the Simulation.

Procedure

Both student and manager groups were instructed on how to make decisions using *Management: A Simulation* by Cretien and Jennings (1988). In the simulation, each team took over operation of an identical pharmaceutical firm producing five different products.

For each decision iteration, twelve choices were made for each product line including price per unit, sales expense level, credit policy, number of personnel, inventory amount, production efficiency level, investment and disinvestment in plant and equipment. In addition, team members were required to determine a company wide R&D expense level and the amount of dividends to be paid. Furthermore, team members could provide funds for their firms by issuing new shares of common or preferred stock, or by buying bonds. Team members could also sell shares of common stock, preferred stock, or bonds. Each of the decision iterations represented one fiscal quarter in simulated time. Decisions were entered into a computer program that generated financial statements and operating information to be used by the management teams in subsequent quarters. Performance in the simulation was measured in terms of net earnings, return on equity, return on assets, stock price, and leverage. The simulation administrator controlled variations in the marketplace affecting the pharmaceutical firms such as

overall market demand, interest rates, etc. Each management team faced identical market variations during the simulation. The overall economic index faced by the pharmaceutical firms was of particular importance. During the first three-quarters of the students' simulation, firms faced strong, growing demand. In the next three-quarters, demand declined markedly, simulating a recessionary environment. The final two quarters returned to a growing demand. For the professional managers, the first quarter simulated growing demand, the next two declined, and the last returned to a growing demand. The recessionary period provided a significant shock to the performance outcomes of the pharmaceutical firms.

After each quarter of the simulation decisions, five team performance items were ranked in descending order and provided to all participating teams. The five performance items included net earnings, return on equity, return on assets, stock price, and liabilities to total assets (leverage). The team identity was not disclosed for the various performance measures. In essence, each team could determine its own performance but could not determine the identity of other teams. Disclosing the performance rankings created a competitive effect for the involved teams.

In addition to regular quarterly operating decisions, ethical vignettes posing various degrees of ethical dilemmas were presented on two different occasions to the operating teams. Student teams made ethical decisions for the fourth and eighth quarters while the manager teams made theirs for the second and fourth quarters. Each ethical decision consisted of four choices ranging in a continuum from most ethical to most unethical (see example in Appendix I). A "most ethical" decision decreased market demand and increased operating expenses. A "most unethical" decision did not increase operating expenses but increased sales. However, a probability existed that the firm might be assessed a significant legal charge for making the unethical decision. In essence, a management team could improve its performance by making an unethical decision while an ethical decision was, at least in the short term, costly.

Measures

Performance was developed using a composite measure consisting of rank ordering from high to low the five performance items and then adding the rank-order values.

Ethical decisions were measured using the particular ethical choice made by each individual operating team. A score of 1 represented the most ethical choice and a score of 4 represented the most unethical decision. Appendix 1 presents one ethical vignette presented to all the groups from this study. Team type was measured using a two-point scale where 1 represented student teams and 2 represented managers. The age of each team was determined by using the mean age of the respective group members.

RESULTS

The data analysis yielded the following results for the hypotheses presented above. The first hypothesis examined whether high performing teams made more ethical decisions than other teams in the simulation. The second hypothesis suggested that low performers would tend to make the most unethical decisions. Pearson's product moment correlation coefficients of $-.1712$ ($p = .09$) and $-.1682$ ($p = .10$) of the relationship between performance and ethical choices gave reason to further investigate

Developments In Business Simulation & Experiential Exercises, Volume 19, 1992

these relationships using analysis of variance. High performing teams were defined as those teams whose performance ranked in the top quartile. Low performers were teams with performance in the bottom quartile. There was some significance for the support of these two hypotheses, means and F-ratios are reported below:

Therefore, we can conclude there may be some relationship between the ethical decision of the team and the team's financial performance. There is marginal support for the propositions that high performing teams make the most

<u>First ethical decision</u>	<u>Second ethical decision</u>
High perf. mean = 1.07	High perf. mean = 1.42
Low perf. mean = 1.33	Low perf. mean = 1.83
F = 2.98, p = .09	F = 3.18, p = .08

ethical decisions, and relatedly, that low performing teams make the most unethical decisions. This would lend some support to the theory proposed by Hosmer (1987).

Hypothesis three tested the notion that a team's second ethical decision would tend to be more unethical than the first. The mean ethical values were 1.125 for the first decision and 1.489 for the second decision. A paired t-test found there was a significant difference between the first ethical choice and the second one ($t = -5.49$, $p = .00$). Therefore, we accept the hypothesis and can conclude there is a highly significant difference in the first and second ethical decisions made by the teams in our sample. Teams tended to choose a more unethical stance on the second vignette. Perhaps this can be explained by the competitiveness of the simulation and the pressure the groups felt after receiving less than excellent performance reports for several quarters.

The fourth hypotheses proposed that age of the teams would impact the ethical choices made. The Pearson's product moment correlation coefficients of $.3809$ ($p = .02$) for the first ethical decision and $-.6375$ ($p = .00$) for the second ethical decision indicate that age and ethical decisions are inversely related. In other words, the older the average age of the teams, the less ethical the decisions. This contradicts the earlier findings of Longenecker, McKinney, and Moore (1989). Reasons for these results warrant further examination.

The fifth hypothesis tested for differences in decisions made by the student teams versus those made by manager teams. Each of the two ethical decisions were tested by ANOVA against the subject type (student versus manager). Given below are the means, F-ratios and p-values for those two tests:

<u>First ethical decision</u>	<u>Second ethical decision</u>
Mgr. group mean = 1.19	Mgr. group mean = 1.69
Student group mean = 1.08	Student group mean = 1.37
F = 1.61, p = .21	F = 4.24, p = .04

Surprisingly, the students made more ethical decisions than did the manager teams. Perhaps this was a characteristic unique to our sample of student teams. In any event, this result should continue to be investigated in future empirical studies. With the second ethical decision, there was a significant difference ($p = .04$) in the decisions made by students and managers, with the student teams being the most ethical.

TABLE 1

Hypotheses of Investigation and Levels of Support

<u>Hypothesis</u>	<u>Indication of Support</u>
1. High performing teams will tend to make the most ethical decisions.	Supported
2. Low performing teams will tend to make the most unethical decisions.	Supported
3. The second ethical decision will tend to be more unethical than the first.	Supported
4. Younger age teams will tend to make the most unethical decisions.	Not Supported
5. Student teams will tend to make more unethical decisions than managers.	Not Supported

As illustrated in Table 1, three of the five hypotheses were supported.

The data herein indicate that team age and group type (manager vs. student) may be strongly correlated. The age of the students was lower than that of the professional managers. The issue of multicollinearity should be addressed before attempting to test this data with any higher level statistical models.

DISCUSSION

The purpose of this study was to explore the interrelationships among a number of factors and their effect on ethical decision making activities. This was accomplished through a research design that included teams of college students and managers participating in a management simulation that involved the management of a pharmaceutical firm. Very few studies have utilized both students and managers in their design (Randall and Gibson, 1990).

The research design also utilized simulation as a learning tool. The combination of control of variables and rapid performance feedback with a simulation provides a rich environment for data collection regarding the relationship of organizational performance and ethical decision making. As described earlier, team members were required to make various management decisions, including a response to an ethical vignette. A team could improve its financial performance by making an unethical decision while an ethical decision was costly. In addition, the decisions in this study involved a group process, while most research regarding ethical behavior has involved individual respondents. This study tended to avoid the problem of respondents giving "socially desirable" responses which has plagued other business ethics studies (Posner and Schmidt, 1984).

Developments In Business Simulation & Experiential Exercises, Volume 19, 1992

Using data analysis consisting of Pearson correlation coefficients and ANOVA F-tests, three of five research hypotheses were supported. Table 1 provides the summary of these findings.

An interesting aspect of business ethics research is whether ethical decision making is situational. McGuire, Sundgren, and Schneewis (1984) posit there is a danger of accepting even the most widely accepted assumptions in the business ethics and social responsibility literature because of situational factors involved in ethical decision making. Trevino's (1986) "individual" variables of personality characteristics and "situational" variables of job characteristics and organizational culture might be combined with the variables of this study for future research efforts. Determining the relationships among these variables and their effects on ethical decision making would provide both academicians and practitioners with much needed insights into the interplay of ethical behavior and organizational decision making.

APPENDIX 1

The company is approached by other manufacturers who offer to control the prices of their products through monopolistic agreements.

1. Report the other companies to the federal regulators and charge them with price fixing.
2. Set the company's prices according to normal market supply and demand. Do not participate in the price agreements.
3. Do not join the price-fixing group officially, but coordinate the company's prices with those of the group.
4. Plot with the managers of competing pharmaceutical companies to fix the prices of comparable products.

REFERENCES

- Baumhart, R.C. 1961 How ethical are businessmen? Harvard Business Review, 39: 6-9, 156-157.
- Bentham, J. 1789 An Introduction to the Principles of Morals and Legislation Oxford, England: Clarendon. American Mind New York: Simon and Schuster.
- Brady, F.N. 1988 Practical formalism: A new methodological proposal for business ethics. Journal of Business Ethics, 7: 163-170
- Covin, J.G. and Covin, T.J. 1990 Competitive - aggressiveness, environmental context, and small firm performance Entrepreneurship: Theory and Practice. 14: 35-50.
- Cretien, P.D. and Jennings, D.F. 1988 Management: A Simulation. Columbus, OH: Merrill Publishing.
- DeConinck, J.B. and Good, D.J. 1989 Perceptual differences of sales practitioners and students concerning ethical behavior Journal of Business Ethics, 8: 667-676
- Forest, P., Cochran, D.S., Ray, D.F. and Robin, D.P. 1989. Factors which influence ethical business judgments: A managerial and societal comparison. Proceedings of the Academy of Management, Washington, D.C
- Frederick, W.C. (ed.) 1987 Research in Corporate Social Performance and Policy: Empirical Studies of Business Ethics and Values Greenwich, CT: JAI Press.
- Fritzsche, D.F. and Becker, H. 1984 Linking management behavior to ethical philosophy: An empirical investigation. Academy of Management Journal, 27, 166-175.
- Hosmer, L.T. 1987 The institutionalization of unethical behavior Journal of Business Ethics, 6: 439-447.
- Kahn, W.A. 1990 Toward an agenda for business ethics research Academy of Management Review, 15: 311-329.
- Kohlberg, L. 1981 Essays in Moral Development. Vol. 1: The Philosophy of Moral Development New York: Harper and Row, pp.409-412.
- Laczniak, G.R. 1983 Business ethics: A manager's primer. Business, 24-29
- Lemke, D.K. and Schminke, M. 1989 Declining ethics in declining organizations: An empirical study. Proceedings of the Academy of Management, Washington, D.C.
- Longenecker, J.G., McKinney, J.A. and Moore, C.W. 1989 The generation gap in business ethics. Business Horizons, 32: 9-14.
- McGuire, J.B., Sundgren, A., and Schneewis, T. 1988 Corporate social responsibility and firm financial performance Academy of Management Journal, 31: 854-872.
- Mitroff, I.I. and Kilmann, R.H. 1977 Teaching managers to do policy analysis: The case of corporate bribery. California Management Review, 20: 47-54.
- Staw, B.M. and Sz wajkowski, E. 1975 The scarcity-munificence component of organizational environments and the commission of illegal acts Administrative Science Quarterly, 20: 345-354.
- Sz wajkowski, L. 1985 Organizational illegality: Theoretical integration and illustrative application Academy of Management Review, 10: 558-567
- Toffler, B.L. 1986 Tough Choices: Managers Talk Ethics. New York: Wiley.
- Trevino, L.K. 1986 Ethical decision making in organizations: A person-situation interactionist model. Academy of Management Review 11: 601-617.
- Waters, J.A. and Bird, F. 1987. The moral dimensions of organizational culture Journal of Business Ethics, 6: 15-22.
- Wood, J.A., Longenecker, J.G., McKinney, J.A. and Moore, C.W. 1988. Ethical attitudes of students and business professionals: A study of moral reasoning. Journal of Business Ethics, 7:249-257.