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A PROFILE OF DECISION MAKING IN FEDERAL CONTRACT MANAGEMENT

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ABSTRACT

This paper presents the preliminary findings of a research project conducted by the author in partial fulfillment of the requirements for the Ph.D. degree at George Washington University. The objective of the research was to determine what factors contribute to decision-making behavior of contract managers in the federal arena. While the overall study employs a regression model to identify the factors that contribute most to the multiple prediction of decision-making behavior, this paper reports early findings from the initial univariate analysis in the form of a profile of the random sample of respondents surveyed.

Thirty four variables were studied, three of which were multi-dimensional: decision type (structured or unstructured), degree of bureaucratization of the work environment, and the decision processes (satisficing or optimizing) used when contract managers face various types of decisions. Other variables, such as sector of employment; job complexity in terms of position held and size and types of contracts managed; amount of training, education, and experience possessed; certification status, as well as a number of demographic factors, were included in the study.

INTRODUCTION

Federal contract management is clearly facing a crisis. Reports in the media of procurement "horror stories" involving grossly overpriced spare parts, supplies such as hammers, pliers, and coffee pots; and major defense systems that simply do not work, have undermined public confidence in the competence of government and associated private-sector contract managers. Documented cases of contractor and government fraud, waste, and abuse have likewise contributed to the general perception that federal contract managers are either ineffective decision makers or are routinely unethical.

The author conducted a study of decision making in federal contract management in an attempt to discover the factors that contribute to decision-making behavior. The goal was to increase what is known about the decision-making process in the hope that more enlightened corrective action can be taken to improve the

process. Equally important is the need to restore congressional and public trust in those responsible for federal procurement.

A questionnaire was sent to a random sample of 1,209 members of the National Contract Management Association, which has a membership of roughly 20,000. A response rate of approximately 63% yielded a total of 762 returned questionnaires. The responses were encoded and analyzed using the Statistical Package for the Social Sciences (SPSSx), running on an IBM mainframe. The results of the initial analysis are presented below.

DISCUSSION OF VARIABLES

An explanation of the multidimensional variables--"decision type", "bureaucratization", and "decision-making process"--is necessary before proceeding.

DECISION TYPE: The research categorizes types of decisions as either "programmed" or "nonprogrammed." Herbert Simon defines these terms below:

Decisions are programmed to the extent that they are repetitive and routine, to the extent that a definite procedure has been worked out for handling them so that they don't have to be treated de novo each time they occur...Decisions are nonprogrammed to the extent that they are novel, unstructured, and unusually consequential. There is no cut-and-dried method of handling the problem because it hasn't arisen before, or because its precise nature and structure are elusive or complex, or because it is so important that it deserves a custom-tailored treatment.¹

BUREAUCRATIZATION: The degree to which performance is governed by law, regulation, clerical routine, standard operating procedures, policy letters, or political factors.

DECISION-MAKING PROCESS: Decision-making can be classified on a continuum ranging from "optimizing" processes at one extreme to "satisficing" processes at the other. Kepner and Tregoe describe an optimizing strategy as a systematic procedure for making decisions they claim is based on the innate human thought process. In describing their rational Decision Analysis process, Kepner and Tregoe submit that once decision makers become aware that a choice must be made, they first consider what "factors" must be satisfied if the ultimate choice is to be optimal. They then formulate alternative courses of action that could satisfy all the mandatory ("must") factors, compare the alternatives with respect to the factors, choose the apparent best alternative, assess any adverse consequences that may flow from the choice, adjust their decision if necessary, and select the best alternative.²

What of those who do not attempt to optimize or maximize when making decisions? Simon refers to this process as "satisficing,"

¹Herbert A. Simon, The New Science of Management Decision, rev. ed., (Englewood Cliffs, NJ: Prentice-Hall, 1977), p. 46.

²Charles H. Kepner and Benjamin B. Tregoe, The New Rational Manager, (Princeton: Princeton Research Press, 1981), pp. 82-84.

which is the process of choosing an alternative that is satisfactory, expedient, or just "good enough," in contrast to "optimizing," which entails a search for the "best" alternative. Simon discusses satisficing in making both routine, programmed decisions and complex, nonprogrammed decisions. For making programmed decisions, Simon states, "Habit is the most general, the most pervasive, of all techniques..."³ Because the human mind is limited in the amount of information it can store and process, Simon claims that we use the "collective memories of organization members" as "vast encyclopedias of factual knowledge, habitual skills, and operating procedures," when we make programmed decisions.⁴

In addition to habit, Simon identifies clerical routine--reliance on standard operating procedures and regulations--as another satisficing decision-making technique for programmed decisions. According to Simon, "The only difference between habits and standard operating procedures is that the former have become internalized--recorded in the central nervous system--while the latter begin as formal, written, recorded programs."⁵

Lindblom's "science of muddling through" is another major "satisficing" decision theory. According to Lindblom, in public organizations decision makers "...are instructed not to practice (the optimizing) method...their prescribed functions and constraints--the politically or legally possible--restrict their attention to relatively few values and relatively few alternative policies among the countless alternatives that might be imagined. It is the second (muddling through) method that is practiced."⁶ (Researcher's parentheses).

What determines which process a given decision maker will employ? If decision makers satisfice, why do they not optimize? Janis and Mann summarize the thoughts of specialists in administrative sciences who offer two explanations for this behavior:

(1) The limitations of the human mind for perceiving and processing information effectively prohibit use of optimizing techniques in complex situations;

(2) Bureaucratic obstacles, such as over-regulation, excessive clerical routine, political factors, and organization structure lead to use of satisficing techniques when optimizing methods would be more appropriate.⁷

RESEARCH FINDINGS

Several interesting findings have emerged from the early analysis. The following table summarizes a few of the demographic variables:

³Herbert A. Simon, Administrative Behavior: A Study of Decision-Making Processes in Administrative Organization, 3rd ed., (New York: The Free Press, 1976), p. 50.

⁴Ibid.

⁵Ibid.

⁶Charles E. Lindblom, "The Science of Muddling Through," Public Administration Review, vol. xix, no. 2, (1959), p. 80.

⁷Irving L. Janis and Leon Mann, Decision Making: A Psychological Analysis of Conflict, Choice, and Commitment, (New York: The Free Press, 1977), p. 41.

AGE

Average Age	43 years
Youngest Respondent	22 years
Oldest Respondent	76 years

SEX

Male	70.2 %
Female	29.8 %

EDUCATION

High School Only	2.0 %
Vocational/Technical School	.9 %
Some College	16.3 %
College Degree	17.4 %
Some Postgrad/Professional	24.6 %
Postgrad/Professional Degree	38.8 %

CONTRACTING COURSES COMPLETED

None	5.5 %
1-3	17.2 %
4-6	20.7 %
7-10	22.3 %
11 or more	34.3 %

EXPERIENCE--YEARS EXPERIENCE IN CONTRACTING

Less Than One Year	3.4 %
1-3	13.3 %
4-6	17.8 %
7-10	21.0 %
11-15	15.9 %
16 Years and Over	28.6 %

CERTIFICATION STATUS

CPCM	15.2 %
CACM	3.7 %
CPM	1.1 %
Other	5.6 %
Not Certified	74.4 %

JOB SATISFACTION

Very Satisfied	29.4 %
Satisfied	41.2 %
Neutral	16.8 %
Dissatisfied	9.4 %
Very Dissatisfied	3.2 %

The analysis of the three multidimensional variables--"Decision Type", "Bureaucratization", and "Process" also produced interesting findings. To briefly summarize, "Decision Type" was coded as either "programmed" or "nonprogrammed", depending on whether respondents considered their decisions as routine, repetitive, etc. "Bureaucratization" was measured as a function of the degree respondents saw their performance governed by regulation, law, SOP, policy, etc. "Process" (decision-making process), was an indication of whether respondents typically "satisfied" by selecting a course of action that was expedient, just "good enough", etc. or whether they searched for the optimal solution

to a problem. The following table summarizes the research findings for these three variables:

DECISION TYPE

Programmed	46.5 %
Nonprogrammed	53.5 %

BUREAUCRATIZATION

Not Bureaucratized	38.5 %
Bureaucratized	61.5 %

DECISION-MAKING PROCESS

Satisficing	80.1 %
Optimizing	19.9 %

DISCUSSION

What is the significance of these findings? The demographic factors show a contract management work force that is highly educated, trained in contracting matters, and experienced. Over 80 per cent of contract managers have at least an undergraduate degree, and 38.8 per cent have a masters degree or higher. Fifty six per cent of the respondents have at least seven contracting courses to their credit, and 34.3 per cent have over 11 courses. The work force is experienced, as shown by the analysis. Over 65 per cent have at least 7 years experience, and 28.6 per cent have at least 16 years experience.

Have contract managers sought professional certification? The survey showed that 15.2 per cent are certified as CPCMs, with another 10.4 per cent CACMs, CPMs, or "other" (such as CPA). These are not particularly impressive statistics. It is known that only about five to seven per cent of the 20,000 members of NCMA hold the CPCM designation. It is interesting to note that CPCMs responded to the questionnaire in a disproportionately large number. This seems to indicate they "care" more about voicing their opinions than do non-certified members.

The survey showed that, overall, contract managers are a satisfied lot, regardless of where they work or what they do. Only 12.6 per cent of those surveyed said they were either dissatisfied or very dissatisfied. This was a surprisingly small number considering the general comments received in the narrative portion of the questionnaire to the effect that many contract managers feel constrained by excessive regulation and unable to exercise "sound business judgment" in performing their duties.

Early findings show a relationship between the types of decisions contract managers face and the decision-making processes they employ. Figure 1 below shows that the more complex the decision (the more nonprogrammed), the more likely are contract managers to optimize, rather than satisfice:

<u>DECISION TYPE</u>			
COUNT/ COL PCT	PROGRAMMED	NONPROGRAMMED	ROW TOTAL
<u>PROCESS</u>			
SATISFICE	301 85.3%	309 75.6%	610 80.1%
OPTIMIZE	52 14.7%	100 24.4%	152 19.9%
COLUMN TOTAL	353 46.3%	409 53.7%	762 100.0%

Figure 1
Crosstabulation--Decision Type by Process

An examination of the cells of the figure show that, of those who face programmed decisions, 85.3 per cent use a satisficing process while 14.7 per cent optimize. In dealing with nonprogrammed decisions, managers also tend to use satisficing approaches, but to a lesser extent. In these cases, 75.6 per cent satisfice, while 24.4 per cent use an optimizing process.

Does a correlation exist between the degree of bureaucratization and decision making process? One would intuitively think so, and early analysis indicates this does seem to be the case.

<u>BUREAUCRATIZATION</u>			
COUNT/ COL PCT	NOT BUREAU- CRATIZED	BUREAUCRATIZED	ROW TOTAL
<u>PROCESS</u>			
SATISFICE	146 49.8%	322 68.7%	468 61.4%
OPTIMIZE	147 50.2%	147 31.3%	152 38.6%
COLUMN TOTAL	293 38.5%	469 61.5%	762 100.0%

Figure 2
Crosstabulation--Bureaucratization by Process

(Figure 1 and 2 correlations are statistically significant at the .05 level)

It can be seen that those who work in a non-bureaucratized environment are about equally likely to satisfice or optimize, but of those who work in a bureaucratized setting, 68.7 per cent satisfice, while only 31.3 per cent optimize. This may indicate that the bureaucracy stultifies the creativity of otherwise astute individuals. Respondents in this latter group stated that the environment in which they work inhibits the exercise of sound business judgment and causes needless confusion and anxiety.

CONCLUSION

This research paper has summarized the findings of a study of the National Contract Management Association membership. These findings were based on the responses from a random sample of 1,209 contract managers. Demographic variables were discussed that describe the membership, and three multidimensional variables were analyzed in an attempt to understand factors that may influence decision-making behavior. Preliminary findings indicate a relationship does exist between decision type and decision-making process. Further, the degree of bureaucratization apparently influences the selection of a decision-making approach.

It must be noted these findings are preliminary and, while statistical significance was shown at the .05 level, subsequent multivariate analysis may show these relationships to be spurious. Other factors could account for the apparent correlations discussed above. The author is currently exploring this possibility.