

STRATEGIC MANAGEMENT IN A METROPOLITAN
AREA; THE IMPLEMENTATION OF
MINNESOTA'S METROPOLITAN LAND
PLANNING ACT OF 1976

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THE STRATEGIC
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INTRODUCTION

A major social problem facing the United States is the strategic management and control of urban growth, maintenance, or decline, especially in major metropolitan areas. The problem may be one of expanding, maintaining or shrinking the provision of goods and services such as housing, industrial locations, roads, airports, schools, water and sewer facilities, solid waste management, police and fire protection, health care facilities, parks and open space, and so forth. Since tens of millions of Americans live in the nation's largest metropolitan areas, the dimensions of the problem are quite large indeed.

It is within this general context that a major experiment in metropolitan growth management and control has unfolded. The Twin Cities area of Minnesota has both a metropolitan governmental structure -- the Metropolitan Council, regional operating commissions and applicable laws -- and a growth management process -- as outlined in the Metropolitan Land Planning Act of 1976 (MLPA). The Council and the Act essentially centralize authority for critical region-shaping policy decisions while allowing the rest of the region-shaping decisions to take place in a more decentralized manner. This paper reports results of a study of the implementation of the MLPA.

The regional growth management system in the Twin Cities

area emerged over a number of years in an evolutionary manner. The resulting design is similar to one that has worked well in the corporate world. Indeed, the Council was patterned partly on the early General Motors model of organizational design -- as some key designers had read and been impressed by Alfred Sloan's My Years at General Motors (New York: Doubleday, 1963) and sought to apply his insights to the problems of metropolitan governance (Harrigan and Johnson, 1978). As articulated by Sloan, the early General Motors design involved having the corporate level headquarters set overall policy and make several major resource allocation decisions; provide policy guidance (and usually some resources) to lower-level units; monitor unit performance against policy guidelines; take corrective action, if necessary; and receive a certain portion of revenues from units to cover its operations and make reallocations to units as necessary. At a time, therefore, when the public sector is being urged to adapt the methods of the private sector to public purposes, the present study can offer some insights as to the applicability of those methods.

A study of this sort is of course not without difficulties. For example, one difficulty in testing the effectiveness of the implementation of the MLPA is knowing what basic elements should be included in the model to be tested. We believe that even the simplest model of the process should include four basic elements: the context within which the planning occurred, the process itself, the result or outcome of the planning, and the interconnections among these elements. Very few studies have

considered all four constructs (exceptions include McCaskey [1974], Nutt [1976, 1982], Bryson and Delbecq [1979], and Van de Ven [1980a, b and c]).

Another particularly important problem for planning researchers is knowing how to represent the planning process for purposes of testing. The planning process typically is thought of as a specific normative sequence of phases or steps -- such as the rational planning model (Stuart, 1969) -- or else as specific sets of activities -- for example, goal setting, communication, or conflict resolution actions (Bryson, 1979). In either case, what is not known is exactly how context, process, and outcomes are related. Ideally one would examine both normative sequences of steps and specific sets of activities simultaneously; Van de Ven (1980a, c), however, is the only researcher to have done so. In this study we had to represent the planning process as sets of activities.

Another difficulty is deciding on theoretical grounds how context, process, and outcome should be related to one another. Overcoming this difficulty is important because it affects how one tests for relationships, on the one hand, and the policy implications of those relationships, on the other. For example, if one expected process to intervene in a causal sequence from context to process to outcomes (our initial expectation in this study), one would test that model using correlation and partial correlation analysis. And if one expects statistically independent effects of context and process on outcomes, then one's theoretical model would be tested using standard multiple regression procedures.¹

Knowing which theoretical model best describes the relationships among context, process, and outcome variables should help answer several planning-related questions. First, is an intervention possible that would affect outcomes in a desired way? Second, can one focus on either context or process variables alone while disregarding the other? Third, where should an intervention be made? Fourth, what should those interventions be? And finally, what will be the effects of an intervention?

A final difficulty arises from the virtual impossibility of field testing the effectiveness of different planning arrangements using large-sample, longitudinal, experimental or quasi-experimental designs. In the absence of such studies, we will never be able to make totally convincing statements about what planning arrangements work best in which circumstances and why. Van de Ven (1980a, c) was able to study the planning efforts of 14 child care organizations longitudinally using a quasi-experimental design, but his study is essentially the only one of its kind. Large-scale cross-sectional analyses also are extremely rare (e.g., Gilbert and Specht, 1977), as are detailed comparative case studies (e.g., Bolan and Nuttall, 1975; Masser, 1981). Only single case studies of planning efforts appear in abundance. This particular study represents one of the few large-scale, cross-sectional studies of a set of planning arrangements.

THE TWIN CITIES PLANNING SYSTEM

The Twin Cities planning system consists of three basic

elements: the Metropolitan Council, the Metropolitan Development Guide, and the Metropolitan Land Planning Act. The Metropolitan Council (MC) is a nationally unique, limited-purpose, regional coordinating agency of government. The Minnesota Attorney General has issued an opinion that the agency is a "unique governmental unit standing a step above local governmental units and a step below state agencies." It basically is responsible for guiding and controlling growth in the Twin Cities metropolitan area. As noted, the Metropolitan Council was set up using the early General Motors model. In that model, corporate policy decisions were reserved for the board of directors and corporate headquarters, while most operating decisions were left to the separate divisions. In the case of the Metropolitan Council, regional decision making was reserved for the Council, while most (though not all) operating decisions were left to the regional operating agencies (i.e., the Metropolitan Waste Control, Transit, Airports, Parks and Open Space, and Sports Facilities Commissions), or to units of local government (Harrigan and Johnson, 1978).

The Council has been delegated a number of specific responsibilities to enable it to conduct long-range planning and to coordinate planning by government and the private sector. The Council:

- o Prepares a long-range (20-30 year) plan for the region called the Metropolitan Development Guide. The Guide is a general "policy oriented" plan for the growth of the region.

- o Reviews applications for federal and state funds submitted by local governmental units and private organizations to see if the proposals are consistent with the Guide.
- o Prepares plans that give explicit direction to the planning of other regional agencies that operate public transit, regional parks, airports, and water pollution control programs. The Council also approves financial proposals, capital programs and detailed plans of the regional agencies.
- o Reviews long-range plans of local governments and can require local units to modify their plans so they are consistent with regional sewer, park, airport and transportation plans that have been developed by the Council.
- o Administers a regional park financing program, and operates as a metropolitan housing and redevelopment authority.
- o Conducts urban research in broad ranging areas and presents its findings to the Legislature for consideration.
- o Provides technical assistance to local government and information to the public.

The Council cannot:

- o Tax indiscriminately -- it has some taxing authority. The amount is set by the Legislature;
- o Pass codes or ordinances; or
- o Zone land or in other ways directly regulate land use -- only local government can do so.

The Council's 1984 budget is about \$10.9 million. About 30 percent of the funds to operate the agency comes from Federal and 4 percent from state sources; 54 percent comes from a metropolitan area property tax and 12 percent from miscellaneous sources (Metropolitan Council, 1983a).

The Council conducts its business through a committee structure. There are six committees (community development, metropolitan commissions, program development and review,

management, resource management, and economic development) plus nine citizen advisory committees (Metropolitan Council, 1983b). The citizen advisory committees assist the Council in the development of plans and in reviewing grant applications in the specialized areas of planning.

The Metropolitan Development Guide plan -- which is produced and enforced by the Metropolitan Council -- calls for providing facilities and services that meet basic human needs and public expectations in accordance with an orderly and economic settlement pattern. The plan provides a "framework" for physical growth in the Region within which a comprehensive set of public services will be provided based in part on the Region's fiscal capacity and public values.

The plan envisions three types of action to bring about an orderly and economic settlement and service delivery pattern for the Twin City area. First, the plan calls for directing metropolitan services to lead growth into already serviced but partially developed and underutilized areas. These are sections of the region that were 'passed over' by the first wave of growth. These areas have vacant land with public services already in place, being paid for, but underused. The plan urges development of such areas for economic reasons.

It calls for similar action to provide services -- interceptor sewers, highway upgrading or regional parks -- to areas now open and undeveloped but abutting the presently urbanized area. This 'new land' will be needed to accommodate the region's natural population growth. On a smaller scale, land in the agricultural centers would also be serviced for new

growth.

Second, the plan contains actions to limit or restrict urban development on productive land or land essential to the natural ecological systems. Production farm land is singled out for preservation -- no urban development -- along with land needed for water drainage, storage, recharge or other environmentally sensitive purposes.

Third, the plan calls for action to support, enrich, and preserve the varied urban living environments in the region. It calls for the channelling of metropolitan investments into projects and programs that support the vitality of the downtowns, older neighborhoods and fully urbanized parts of the region. Programs would be undertaken to enhance and maintain the attractiveness of these areas. In addition, and on a smaller scale, similar programs would be conducted in the region's small towns.

The Metropolitan Land Planning Act (MLPA) of 1976 required the Council by July 1, 1977 to prepare a metropolitan systems statement for each of the 195 local units of government and each of the 49 School Districts. The statement was based on the Development Guide and contains information relating to the unit and appropriate surrounding territory that the Council determined was necessary for the unit to consider in preparing its comprehensive plan, including the following:

- o The timing, character, function, location, projected capacity and conditions on use, for existing or planned metropolitan public facilities, as specified in metropolitan system plans, and for state and federal public facilities to the extent known to the Council.

- o The population, employment and housing need projections which were used by the Council as a basis for its metropolitan systems plans;
- o Any parts of the land use plan, public facilities or housing implementation program which may be excluded from the plan of the local government unit. The exclusion of parts had to be based on the nature and character of existing and projected development within each local governmental unit and on policies, statements, and recommendations contained in metropolitan system plans.

The statement had to be agreed to by both the Council and the local unit. There were procedures, including possible use of the courts, to assure such agreement. Once agreement was reached, the local unit had to prepare a comprehensive plan by the end of July, 1980 that conformed to the systems statement and all applicable Metropolitan Council Review Criteria. (Most local units did not meet this deadline, and a few still have not.) The criteria were based almost exclusively on the Metropolitan Development Guide. The local units' comprehensive plans had to contain: a land use plan, a public facilities plan, a housing implementation program (for low and moderate income housing), capital improvements program, and a description of an integrated set of official controls (e.g., zoning ordinances, sewer regulations, and subdivision ordinances that the units said would be used in part to implement the plans). The Council could force local units to revise plans that didn't meet review criteria. Again, the courts provided a last resort for resolving any differences.

STUDY DESIGN

The basic conceptualization which guided the study is presented in Figure 1a. Context variables were seen as affecting

outcome variables directly as well as indirectly through their effects on process variables. Process variables were seen as affecting outcome variables. In other words, in this model, process variables are seen as intervening in a causal sequence between context and outcome.

Recent work on contingency approaches to planning prompted this model (cf. Galloway, 1979; Masser, 1981; Nutt, 1976). Bryson and Delbecq (1979), for example, found in a laboratory study that contextual factors did seem to influence the processes constructed by planners, and that these processes in turn affected outcomes. They also found, however, that there appeared to be some processual things that planners always did or never did regardless of the context. That is, they found occasions in which process appeared to have independent (as opposed to intervening) effects on outcomes. Thus, while we were guided initially by the intervening effects model presented in Figure 1a, we also tested for the independent effects of process on outcomes; that is, we tested the model in Figure 1b as well.

Knowing whether process intervenes between context and outcomes or has independent effects on outcomes is of immense practical significance to planners. If process is an intervening variable, then planners are directly constrained by the context within which they operate. That is, the context directly determines the appropriate process which in turn determines outcomes. The implication for policy makers is that they should manipulate context -- and not worry so much about process -- as they seek to affect outcomes. On the other hand, if process is

an independent variable, then planners may have far more leeway as they seek to affect outcomes. Furthermore, policy makers must worry about context and process if they wish to affect outcomes.

Study data came from the U.S. Census and from answers to a lengthy questionnaire. A representative from each of the 195 units of local government was invited to fill out the questionnaire; 69 representatives accepted and received a fifty-dollar honorarium after the questionnaire was completed. The relatively low response rate (35%) is something of a problem, although the problem is mitigated somewhat by the fact that the vast majority of non-respondents represent small rural townships. A majority of the population of the metropolitan area is represented by the units of government in our sample. The fact that we had only one respondent per unit of government also limits the confidence one can place in our results. Nonetheless, the number of respondents is high enough to make statistical tests of significance of relationships across respondents meaningful.

The intervening effects model was tested using correlation and partial correlation analysis. The independent effects model was tested using multiple regression analysis.

Measures

Most variables were measured on a five-point Likert scale, with differing anchors. Whenever possible, we tried to develop multiple indicators of a phenomenon. Sometimes these multiple indicators were collapsed into scales, sometimes not. Table 1 reports the means and standard deviations for all the variables,

as well as reliability coefficients for the multi-item scale variables. An abbreviated description follows; a complete description may be obtained from the authors.

Contextual Variables

Many studies have shown that the relative availability of resources can strongly influence the processes in which organizations engage and outcomes (Pfeffer and Salancik, 1978). The following resource measures were used in our study: (1) time allotted for completing plan (AMPLETIM); (2) level of financial resources (RESAMPLE); (3) dependency on grant money for preparing plan (DEPGRANT); (4) dependency on grant money for implementing plan (DEPMONEY); and (5) adequacy of full-time equivalent professionals to prepare plan (ADEQUATE).

Population size also can be expected to have an impact on processes and outcomes, particularly to the extent that smaller places tend to be rural townships and larger places tend to be fully developed cities and suburbs (Dye, 1981). Population in 1980 (POP80) was our measure of this characteristic.

Finally, stability or turbulence in the interorganizational environment can be expected to affect the process of planning (Emery and Trist, 1965; Bryson and Delbecq, 1979). In particular, we were interested in whether or not role changes among organizational actors (ENVSTABL) would affect the process of planning.

Process Variables

Three attributes of the goal-setting process for the overall metropolitan growth management system were measured using multi-item scales. The attributes were: how reasonable local units

felt the MLPA and its associated implementation process were,
which we thought of as goal acceptability (GOALACCP), the
degree to which units felt that the MLPA and MC were clear about
their expectations and requirements for local units, which we
thought of as goal specificity (GOALSPEC), and the degree
to which local units felt they were supported (in the way of
attention and technical assistance) by the Metropolitan Council
as the units worked to meet the requirements of the MLPA
(GOALSUPP). Research on goal-setting has shown that resource
availability can have an effect on these three variables and that
all three variables can have an impact on outcomes (Covaleski and
Dersmith, 1981; Lalham and Yukl, 1975; Steers and Porter, 1974;
Yukl, 1981).

Frequency of organizational and interorganizational
communications (FRECOM), changes in organizational and
interorganizational communication patterns (COMCHG), average
number of different conflict resolution methods used to resolve
the most important issues faced by the respondent community
(AVGRESM), and whether or not a consultant was used in preparing
the local units' comprehensive plan (CONUSED) were the other
process variables measured.

Outcome Variables

We were interested in whether the MLPA had had a impact on
units' plans, whether the units felt their abilities had been
improved as a result of the process, whether they were satisfied
with the results, and how effective the MLPA would be in solving
regional and local problems. Various questions were asked to get
at our concerns in these areas:

Impact of the MLPA on Unit's Plans. Two questions were asked: The first was: "How different is the plan prepared under the MLPA from your earlier plan?" (HOWDIFPL). The second, labeled ACTION, was "If the MLPA had not been enacted, what action would the community have taken in the last three years with regard to the comprehensive plan?"

Improvements in Units' Capabilities. Two questions assessed the act's impact on units' capabilities. The first, labeled AFFECT, asked, "How did the project affect your unit of government's capability for making future decisions allocating resources or undertaking other future endeavors?" The second, referred to as LEARNED, asked, "To what extent will what was learned from the comprehensive planning and implementation process be useful for understanding future comprehensive planning and implementation endeavors?"

Overall Satisfaction. To assess overall satisfaction (TOTSAT), respondents were asked to what extent they felt their comprehensive plans would improve decision making in general operations, land use, public facilities, housing and capital improvements. They also were asked whether the official controls identified in the plan would actually achieve plan objectives.

Effectiveness of MLPA in Solving Problems. To assess the effectiveness of the MLPA (EFFECT), subjects were asked (a) How effective will the MLPA (1976) be in meeting regional needs and solving regional problems? and (b) How effective will the MLPA be in meeting local needs and solving local problems?

RESULTS AND DISCUSSION

Basic results of the statistical analysis will now be presented, along with a discussion of the implications of these results for planning practice. First, we present summary statistics on the impact of the MLPA's implementation as seen by our respondents. Secondly, we will present statistically significant bi-variate relationships between context, process and outcome variables. And lastly we will present the situations in which the intervening and independent effects models held.

Several qualifications are in order, however, before proceeding. First, this research mainly used perceptual, not behavioral, measures. One needs to be cautious therefore in using the results to predict behavior. Second, the study asked respondents to answer questions retrospectively. The accuracy of their memories is uncertain. Third, since only one respondent per unit of government was involved in the study, the representativeness of the respondents is open to question, although statistical generalizations across respondents are justified.

Another major qualification is the uniqueness of the case. There is no other regional government quite like the Metropolitan Council and no other mandatory land planning legislation quite like the MLPA. Extreme caution is therefore necessary in generalizing results to other situations. On the other hand, the Twin Cities area often is considered a major national innovator in public planning practice, so its example may be adopted elsewhere. And the fact that the Twin Cities regional-local planning system is a public sector analogue of much private

corporate planning practice makes it particularly interesting. In addition, many of the context, process, and outcome variables measured in this study are quite common to planning practice generally. Thus, while caution is required in generalizing results, there is reason to believe they may be applicable elsewhere.

The Impact of the Implementation of the MLPA

Overall, the MLPA appears to have had a salutary effect on the Twin Cities' regional-local planning system in each of our outcome variable categories. Notable impacts were reported on units' plans. Seventy-one percent (71%) of our respondents (49 of 69) indicated that half or more of the contents of their plans prepared under the MLPA were different from previous plans. Only 14.5% of our respondents (10 of 69) believed that their comprehensive plans would have been updated with similar effort as under the MLPA in the previous three years had the MLPA not been enacted.

Local units' capabilities also were substantially improved. Over seventy percent (72.7%) of our respondents (48 of 66) felt that their units' capabilities for making future decisions allocating resources or for undertaking other future endeavors had been either improved or greatly improved as a result of the planning effort. Almost ninety percent (87.8%, 58 of 66) felt that what was learned from the process was either moderately, very, or exceedingly useful for understanding future comprehensive planning and implementation endeavors.

A little over three-quarters of our respondents (75.8%; 50 of 66) were either generally or extremely satisfied that their final comprehensive plans will improve their local unit's decision making. Finally, 73.5% of our respondents (50 of 68) felt that the MLPA will be effective in meeting both regional and local needs at least half or more of the time. While there clearly is room for improvement in all of these figures, on balance they demonstrate a clear positive impact of the MLPA and its implementation.

Relationships Linking Context
to Process and Outcome Variables

Hypotheses relating context to process and outcome variables were tested.² Nine statistically significant ($p < .05$ level) bi-variate relationships (i.e., Person product-moment correlations) linking context to process and outcome variables were observed (see Figure 2):³

- (1) The more ample the time available to local units for plan preparation, the greater their acceptance of the MLPA and its associated implementation process.

The proposition that subordinate units of government are more likely to accept the task of preparing comprehensive plans when they have ample time to do so is not surprising. The policy advice is clear: don't ask units of government to perform tasks that cannot be easily accommodated into ongoing administrative operations (Zaltman and Duncan, 1977).

- (2, 3 & 4) The more ample the resources available for plan preparation, the less the acceptance of the MLPA and its associated implementation process, the less supported local units felt they were by the MC, and the less frequent the communications among potentially affected organizations.

These next findings involving resource measures are more interesting. Apparently more richly endowed local units are less likely to accept regional planning legislation and the regional government's process for implementing it. These local units are also less likely to feel the regional government attends to their needs, and are less likely to communicate with the regional government or other affected parties over the course of the planning process. In short, resource rich units are more likely to try to go their own way than are units which rely on funding from the regional government to prepare plans. The implication is that one should not expect a regional planning system to work well when local units have enough resources to act autonomously (c.f. Pfeffer and Salancik, 1978).

- (5 & 6) The greater the dependence on local units on grant money for plan preparation and for decision making based on the plan, the more specific the local units perceived the MLPA and MC to be about goals.

Most of the grant money for plan preparation and for decision making based on the plan came from the Metropolitan Council. Units dependent on these grant monies -- namely, the more resource poor units -- had to prepare grant applications on which they received feedback from the MC. The result was greater perceived specificity on the part of these local units about what the MLPA and MC sought. Again, the implication is that one should not expect a regional planning system to work well when local units have enough resources to act autonomously, because they are less likely to put in the time and effort it takes to be clear about what the goals of the system are.

- (7) The more adequate the number of professionals available to local units for plan preparation, the greater the perceived effectiveness of the MLPA.

The finding is unsurprising that the more adequate the number of professionals available for plan preparation, the greater the perceived effectiveness. The result is unsurprising because professional input is necessary to prepare the plans mandated by the MLPA. The implication is that planning legislation is less likely to be effective if units of government are required to prepare plans needing professional input, but do not have enough professional help available to do the job. Of course, grants might be made available to these units to help them acquire needed professional assistance.

- (8) The greater a local units' population in 1980, the less likely a consultant would be used to assist it with plan preparation.

That smaller units of government were more likely to hire a consultant to help with plan preparation is unsurprising, since these units are less likely to have in-house professional staff available to do the job. Mandatory regional planning legislation therefore should take into account the fact that smaller units of government probably will need to rely on outside expertise to help prepare their plans.

- (9) The greater the role changes of actors as a result of the MLPA, the greater the changes in communication patterns.

The more the roles of actors are altered by planning legislation, the more communication patterns are changed -- an expected result. To facilitate the implied new learning and information sharing that will be required, training and

orientation sessions should be offered, and educational materials and operational guides should be prepared, used, and distributed by the regional government (as was done by the MC) or an appropriate professional organization.

Results Linking Context to Outcome Variables

Hypotheses relating process to outcome variables were also tested.⁴ Sixteen statistically significant bi-variate relationships linking process to outcome variables observed (see Figure 2).⁵

- (1, 2 & 3) The greater the goal acceptance by local units of the MLPA and its associated implementation process, the greater the perceived improvement in units' decision making capability, the greater their total satisfaction, and the greater their perceived effectiveness of the MLPA.

The impacts of goal-setting variables on outcomes were among the strongest found in the study. Greater acceptance of the MLPA and its associated implementation process led to improvements in local units' decision making capabilities, to greater total satisfaction with the results of the exercise on the part of local units, and to greater perceived effectiveness of the MLPA by the local units. A legislature formulating mandatory regional planning legislation, and a regional government charged with implementing it, would be wise to do whatever it can to improve goal acceptance. The aim of such efforts should be the development and implementation of legislation seen to be reasonable by local units as far as its coordinating mechanism, plan content requirements, financial burdens, expectations of local communities, and time schedules are concerned (c.f. Van de

Ven and Freeman, 1983).

- (4 & 5) The more local units perceived the MLPA to be specific about goals, the more the local units were satisfied with their plans and the more they perceived the MLPA to be effective.

Research on goal-setting suggests that goal specificity has the most consistent positive impact on performance (Latham and Yukl, 1975). These findings demonstrate this impact for a regional planning system, as well as the impact of goal specificity or satisfaction. Development and implementation of regional planning legislation therefore should strive for goal specificity. A grant making process with feedback is likely to work well in this regard for resource poor units, as noted in the previous section. Other methods are likely to be necessary, however, for resource rich units. Possibilities would include site visits by regional personnel, special training and orientation sessions, and distribution of easily understandable educational materials and operational guides.

- (6, 7 & 8) The more the local units felt they were supported by the MC, the more the local units felt their decision making capabilities were improved, the more satisfied they were with the outcomes of the process, and the more they felt the MLPA was effective.

Supportiveness of the MC also had a strong impact on outcomes. The more supported local units felt they were, the more they felt their decision making capabilities were improved, the more satisfied they were with the outcomes of the process, and the more effective they felt the MLPA was. The implication is clear. A regional government wishing to be seen as supportive by local units should: be responsive to regional needs and problems, take the time required to become familiar with local

communities and their circumstances; allow local units sufficient opportunity to present and explain their jurisdiction's views and positions, and -- when local units submit their plans for informal review -- provide helpful reviews. Such supportiveness is likely to have a substantial payoff in improved outcomes for the whole planning system.

(9 & 10) The more frequent the communication among affected units, the more they felt they had learned, and the greater their total satisfaction with the outcomes of the process.

Increased frequency of communication increased both the usefulness of local units' learning and satisfaction. It appears that planners would be well advised to heed recent calls to improve their communication skills -- and to use those skills (Schon, et al., 1976; Hemmens, et al., 1978; Bryson and Delbecq, 1979).

(11, 12 & 13) The greater the average number of conflict resolution methods used by local units, the more they felt their decision making capabilities were improved, the more they felt their learning was useful, and the more they were satisfied with the outcomes of the process.

Serious efforts at conflict resolution using a variety of methods also had strong impacts on outcomes for local units; namely, such efforts resulted in greater improvements in decision making capabilities, greater usefulness of learning, and higher total satisfaction. Planners in other words, would be wise to develop and use their conflict resolution skills (c.f. Susskind and Ozawa, 1983).

(14, 15 & 16) The more a consultant was used by local units to help with plan preparation, the more the actions of the local units were different from what they would have been in the absence of the MLPA, the

more the plans that resulted were little different from previous plans, and the more useful the local units felt what they learned was for understanding future comprehensive planning and implementation endeavors.

Communities that used a consultant were less likely to have updated their comprehensive plans with effort similar to that required by the MLPA if the MLPA had not been enacted.

Communities that did use consultants tended to be small, rural townships with few staff. In the absence of the MLPA they were not inclined to engage in comprehensive planning. The MLPA therefore did get these units to engage in comprehensive planning that they would not have done otherwise, and got them to hire a consultant to assist them in their efforts. Mandatory planning clearly can have an impact in this regard.

However, the plans that resulted from the use of a consultant tended to be little different from previous plans. Anecdotal evidence from our respondents and from MC staff provides two possible explanations. First, many units hired a consultant simply to make sure a plan was prepared that met the MLPA's requirements in a pro forma way. And second, many consultants turned out very standard, unexceptional plans that relied heavily on previous plans.

Finally, units that used a consultant felt they learned more that was useful for understanding future comprehensive planning and implementation endeavors than did units who did not use a consultant. This result is not too surprising, since units hiring consultants tended to be smaller units with little or no planning staff and little comprehensive planning experience. Having a consultant help them through the process apparently

taught these units a good bit that they felt would be useful in future efforts.

Consultants therefore had quite an impact on local units' plans and capabilities. The quality of that impact is, of course, another question. A regional government implementing mandatory planning legislation would be wise to hold orientation and training sessions for consultants (as the MC did), and to prepare accurate and easily understandable educational materials and guidance for plan preparers, if it wishes to positively affect the quality of the consultants' impacts on local governments.

Intevening Effects Model

After examining our a priori hypotheses, our next task was more exploratory -- namely, the fitting of our data to the different theoretical models. Based on our original conceptualization (Figure 1), we expected the intervening model (i.e., context leads to process which in turn leads to outcomes) to be the most representative of the data. Thus this was the first model we examined. To test this assumption, we examined all potential paths between context and outcomes controlling for process effects.⁶ In only two situations was there an intervening effect. Thus, there is very little support overall for an intervening effects model.

The two instances of intervening effects are as follows:

(1) Smaller communities used outside consultants, which in turn resulted in actions (that is, communities put greater effort into the preparation of plans) than would have occurred otherwise.

(2) Smaller communities used outside consultants, which in turn resulted in greater satisfaction with the products of the planning process as decision aids.

Here again we see the strong impact of consultants on outcomes for smaller communities -- and the implied need for the regional government to make sure that the consultants understand what is sought by the mandatory planning law and the regional government. In other words, the information, advice and products supplied to smaller communities by their consultants had a strong impact. The regional government needs to do what it can to assure that the information, advice and products are high in quality.

Independent Effects Model

The results from the bi-variate and partial correlation analysis indicated that the independent effects model might be the most representative of the data. However, the bivariate correlations did not examine the simultaneous effects of both context and process variables on outcomes. Therefore, to further test this model we ran stepwise multiple regressions on the paths.

In virtually all of the applicable cases the results indicated support for a single main effects model linking context or process variables to outcome variables. In only one case did a context variable contribute independently along with a process variable to an outcome variable. Thus, there is also very little support overall for an independent effects model in which both context and process contribute independently to outcomes.

The one case of context and process having independent effects is as follows:

- (1) Smaller communities and communities that used a consultant created plans that were little different from previous plans.

In other words, the MLPA and its implementation basically led to a minor updating of previous plans for smaller communities and communities that used consultants. This effect probably can be seen as a marginal improvement in the overall regional-local planning system.

CONCLUSIONS

This study leads to conclusions in three different categories: the study of planning systems, the implementation of the MLPA, and the applicability of corporate planning models to public planning practice.

The Study of Planning Systems

This study demonstrates the usefulness of conceptualizing planning systems as including context, process, and outcome variables, along with their interrelationships, when one's purpose is to test the implementation and operation of these systems. This approach is compatible with several recent empirical studies of planning (e.g., Bolan and Nuttall, 1975; Gilbert and Specht, 1977; Bryson and Delbecq, 1979; Van de Ven, 1980, a and c), and if pursued, is likely to sharpen our understanding of the uses and limitations of the newly popular contingency approaches to planning.

This study also demonstrates the usefulness of conceptualizing

planning as sets of activities (e.g., goal-setting, communication, conflict resolution, and use of a consultant) in addition to thinking of planning as a normative sequence of stages (e.g., the rational or incremental planning models). Planning practice consists of both and we should study both, preferably simultaneously, although that was not possible in this case.

We feel the study also indicates the importance of deciding on theoretical grounds how context, process and outcome are related to one another. The decision is important because it affects how one tests for relationships, on the one hand, and the policy implications of those relationships on the other hand. For example, the present study indicates the primacy of direct process-outcome relationships. The result suggests that the specific activities of regional and local planners have an enormous impact on the success of the regional-local system -- an impact that is not conditioned in any observable way by the context -- as we measured it -- in which they operate. Furthermore, doing a better job at several of these activities probably would have improved the overall performance of the system even more.

Lastly, we feel the study has demonstrated the utility of large cross-sectional studies of regional-local planning systems. While such studies offer only "snapshots" and not the comparative statics or detailed dynamics of more longitudinal studies, they still offer useful information we are not likely to uncover in the single case studies that dominate the study of planning practice.

The Implementation of the MLPA

Earlier we presented data indicating that the implementation of the MLPA has on balance led to positive results for the regional-local planning system. What conclusions may be drawn about the impacts of context and process on producing these results?

Two basic findings were quite surprising, given our initial conceptualization. These are the absence, for the most part, of direct context-outcome relationships, and the general primacy and statistical independence of process variables in affecting outcomes. We had expected stronger context-outcome relationships based on recent work on contingency approaches to planning, particularly project planning. It is arguable, however, that context-process and context-outcome relationships are less likely to be pronounced in comprehensive planning than in project planning, since comprehensive planning generally tends to be more macro-scaled, policies-oriented, and less concerned with implementation.

The primacy and statistical independence of process variables in explaining variations in outcomes also was surprising. We had expected numerous direct causal connections from context to process to outcomes. In other words, we had conceptualized process variables as intervening in a causal sequence between context and outcomes.

Several reasons may be offered for the absence of this causal sequence. First, people really may not have been causally influenced by context as they constructed processes to affect outcomes. Second, we may have focused on the wrong set of

context, process, and outcome variables. Third, context may not have constrained process-outcome relationships very much. In comprehensive planning certain basic things need to be done regardless of context -- such as basic studies -- and there may not have been much room left for variation in response to other factors.

Finally, there is a question of the degree to which both context and process variables are manipulable by various hierarchical levels of government. In the situation we studied, the MLPA and MC set much of the context and process for local units of government. Local units had limited discretion in manipulating context variables, and somewhat more discretion in controlling process variables. More numerous direct context-process-outcome relationships may exist, but we were not able to detect them because of the absence of variation in our variables. This explanation actually is the most intriguing, because it implies that the real power of the MLPA and MC comes from establishing the premises underlying decision making, rather than from prescribing specific sets of activities or detailed outcomes. March and Simon (1958), for example, were among the first to argue that establishing the premises underlying decision making is a far more powerful behavioral control than is prescribing specific actions or dictating specific decisions.

In our study, the primary impact of context (as we measured it) was of resources on goal-setting and communication and of population on the use of a consultant. Too much resource independence on the part of local units appears to have

detrimental impacts on the overall effectiveness of the regional-local planning system. More richly endowed local units are less likely to accept regional planning legislation or the regional government's process for implementing it. They are also less likely clearly to understand what is expected of them, less likely to feel the regional government attends to their needs, and less likely to communicate with the regional government -- or other units of government -- over the course of the planning process. These results are, in turn, associated (though not causally) with lesser improvements in units' decision making capabilities, lower satisfaction with the product of the process, and lower opinions regarding the effectiveness of the MLPA. A regional-local planning system such as the one found in the Twin Cities therefore appears to work best where local units are at least moderately dependent on the regional government for resources to prepare and implement plans. Interestingly, research on the private sector hints at the same conclusion: that a reasonable balance of resource dependence and independence -- and the shared power that results -- usually leads to better outcomes, such as improved efficiency, decision making and adaptability (e.g., Peters and Waterman, 1982; Lawrence and Dyer, 1983; Kanter, 1983).

Smaller units of government must rely on consultants to help them prepare plans. Consultants, in turn, had a powerful impact on the outcomes of the planning process. It is therefore extremely important for the regional government in a regional-local system like the Twin Cities to work with consultants to make sure the advice and products consultants deliver are in

accord with regional expectations.

The really good news for planners from our study is that process really does make a difference. Efforts to improve goal acceptance, goal specificity and goal support had a positive effect -- and planners have it in their power to do many of the process things that make that difference. A regional government charged with implementing mandatory land planning legislation would be wise to do whatever it can to improve goal acceptance, specificity and support, since these have such a strong positive impact on outcomes. Further, planners at all levels should improve their communication and conflict resolution skills -- and use them -- since they also had a strong positive effect on outcomes.

The Applicability of Corporate Planning Models
to Public Sector Planning Practice

We now return to where we began -- to the question of the strategic management and control of metropolitan growth, maintenance or decline. In the Twin Cities Metropolitan Area a structure and process for strategic management and control has evolved over the years into a system that is in effect (and partly by design) a public sector analogue of many corporate planning systems. In this model, authority for critical system-wide decisions is reserved for the highest levels, while authority for other decisions is placed lower down in the system.

Based on our data we must conclude that the model works reasonably well as it has been applied in the Twin Cities area -- and can be made to work better. Whether it would work elsewhere

is an open question. There is no other regional government quite like the Metropolitan Council and no other mandatory land planning legislation quite like the MLPA. Extreme caution is therefore necessary in generalizing results to other situations. On the other hand, the Twin Cities area often is looked to as a major innovator in planning practice, so results of this study may be regarded as feedback on how the "cutting edge" is working. In addition, many of the context, process, and outcome variables measured in this study are quite common to planning practice generally. And finally, the public sector is being urged these days to adapt private sector models to public purposes. Thus, while caution is required in generalizing results, we feel that planners everywhere can benefit from the Twin Cities' experience with implementing the Metropolitan Land Planning Act.

Footnotes

¹ -Further, if one expected process to moderate or suppress a direct causal linkage from context to outcomes, then one would use moderated regression analysis to test the model. And if one expected only interaction effects between context and process (and not main effects) to cause changes in outcomes, one would test that model using moderated regression analysis as well, but one would expect no main effects.

² A full discussion of the logic of the hypotheses can be found in: John M. Bryson and Kimberly B. Boal, Strategic Management in a Metropolitan Area: The Implementation of Minnesota's Metropolitan Land Planning Act of 1976. Hubert H. Humphrey Institute of Public Affairs, University of Minnesota, Working Paper, 1982.

³ One must be careful in drawing inferences when examining a large number of correlations, especially with a small sample size. Some will be significant or nonsignificant by chance. Also, the level at which all the significant correlations hold simultaneously is considerably less than $p < .05$. The alternative, of course, would be to only examine a few variables, thus reducing the likelihood of committing type I and II errors. However, we do not believe that our current state of knowledge permits specification of the most "crucial" variables. Thus, we accept the risks inherent in large exploratory studies.

⁴ See note 2.

⁵ See note 3.

⁶ As noted, the model proposed in figure 1a implies that the "process variables" intervene (in many cases) between the contextual and outcome variables. A test of this assumption requires comparing the first order partial correlations against the bi-variate correlations. If the zero order correlations are significant, but the partials are non-significant, then we would conclude that the process variables do intervene between the contextual and outcome variables. If the zero order correlations are non significant, but the partials are significant, then the process variables are acting as "suppressor" or "distorter" variables. (Suppressor variables, also known as "distorter" variables, tend to mask the actual relationship between an independent and dependent variable. This usually occurs because the suppressor variable is positively correlated with one of the variables but negatively correlated with the other.) If both the zero order and the partials are both significant or non significant then we would conclude that contextual and process variables have independent effects.

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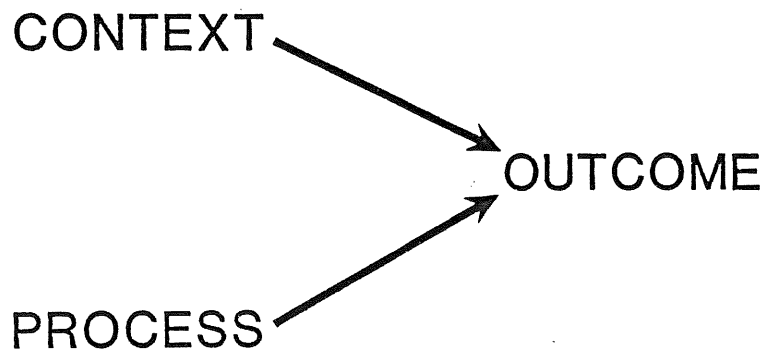
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a. Intervening Effects Model



b. Independent Effects Model

Figure 1. Relationships Tested Among Context, Process and Outcome Variables.

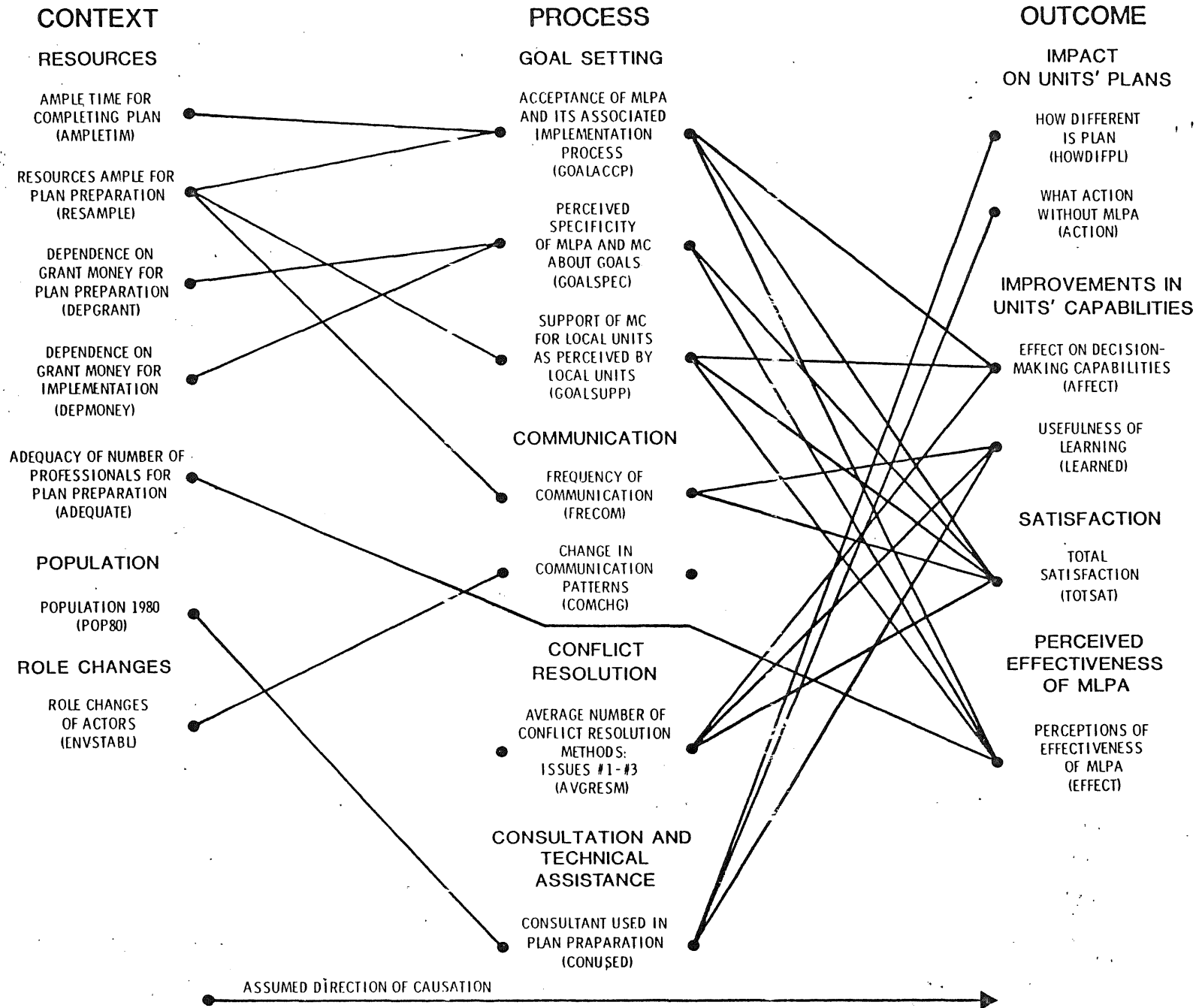


FIGURE 2. STATISTICALLY SIGNIFICANT PEARSON PRODUCT-MOMENT CORRELATIONS AMONG CONTEXT, PROCESS, AND OUTCOME VARIABLES.

Table 1.

MEANS, STANDARD DEVIATIONS AND RELIABILITIES OF VARIABLES

<u>Variable</u>	<u>Number of Items</u>	\bar{X}	S.D.	α
<u>Context</u>				
AMPLETIM	1	3.10	1.05	
RESAMPLE	1	2.55	.80	
DEPGRANT	1	3.42	1.28	
DEPMONEY	1	2.13	1.49	
ADEQUATE	1	2.86	.95	
POP80	1	44,110	133,086	
ENVSTABL	1	2.21	3.02	
<u>Process</u>				
GOALACCP	5	3.20	.60	.65
GOALSPEC	2	2.92	.63	.53
GOALSUPP	4	3.42	.64	.52
FRECOM	9	2.46	.06	.55
COMCHG	9	2.77	2.46	
AVGRESM	3	3.83	2.00	
CONUSED	1	.78	.42	
<u>Outcome</u>				
HOWDIFPL	1	3.20	1.20	
ACTION	1	2.55	.95	
AFFECT	1	3.44	.54	
LEARNED	1	2.59	.82	
TOTSAT	6	3.49	.69	.83
EFFECT	2	3.07	.87	

Table 2

STATISTICALLY SIGNIFICANT ($p < .05$) PEARSON
PRODUCT-MOMENT CORRELATIONS LINKING CONTEXT
PROCESS AND OUTCOME VARIABLES

<u>Variables</u>	<u>Correlation</u>
1) AMPLETIM with GOALACCP	.23
2) RESAMPLE with GOALACCP	-.27
3) RESAMPLE with GOALSUPP	-.28
4) RESAMPLE with FRECOM	-.23
5) DEPGRANT with GOALSPEC	.21
6) DEPMONEY with GOALSPEC	.25
7) ADEQUATE with EFFECT	.28
8) POP80 with CONUSED	-.47
9) ENVSTABL with COMCHG	.80

Table 3

STATISTICALLY SIGNIFICANT (p. .05) PEARSON
PRODUCT-MOMENT CORRELATIONS LINKING PROCESS
TO OUTCOME VARIABLES

<u>Variables</u>	<u>Correlation</u>
1) GOALACCP with AFFECT	.26
2) GOALACCP with TOTSAT	.42
3) GOALACCP with EFFECT	.47
4) GOALSPEC with TOTSAT	.39
5) GOALSPEC with EFFECT	.39
6) GOALSUPP with AFFECT	.33
7) GOALSUPP with TOTSAT	.39
8) GOALSUPP with EFFECT	.56
9) FRECOM with LEARNED	.36
10) FRECOM with TOTSAT	.34
11) AVGRESM with AFFECT	.32
12) AVGRESM with LEARNED	.30
13) AVGRESM with TOTSAT	.31
14) CONUSED with HOWDIFPL	-.31
15) CONUSED with ACTION	.39
16) CONUSED with LEARNED	.23