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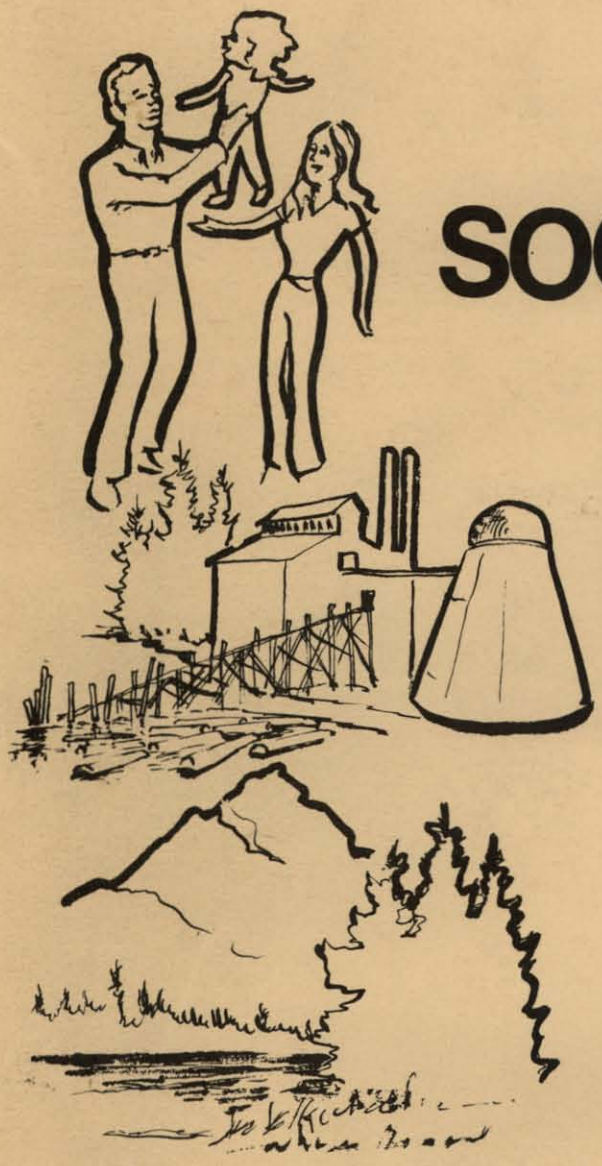

THE ROLE OF SOCIO-ECONOMIC DATA IN IDAHO LAND USE PLANNING

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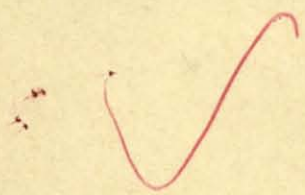

CONTENTS

HIGHLIGHTS

. . . Based on perceptions of Idaho land-use planners, recreation data, relative to other data, is the most important and least available socio-economic planning data input.

. . . Among various types of recreation data, economic values for non-market commodities are considered the most important and least available by Idaho planners.

. . . Relative to other types of socio-economic data, data of an income, employment and industrial nature are considered the least important socio-economic inputs.

. . . Planner reactions to questions of importance for population and community oriented data reveal that these types of data are generally of greater planning importance than industry, income or employment data but less important than recreation data.

. . . A substantial portion of all socio-economic data perceived to be important by planners is felt to be unavailable or of uncertain availability.

. . . Most planners accept the county as the most appropriate geographical planning unit for data based purposes.

. . . Planning is generally done on a time horizon of fifteen years or less. However, socio-economic projection data is needed for time spans of twenty to fifty years by a majority of planners.

. . . Socio-economic data is currently used primarily in a descriptive sense. Lack of training in social and economic fields, limited planning experience and inadequate staff generally preclude analytical approaches to data application.

. . . A majority of planners feel that continuing education programs would be beneficial in providing skills necessary to improve their use of community, population, industry, income, and employment types of data.

. . . The study underscored a need to provide planners with the expertise to fully utilize socio-economic data. The ability to convert social and economic data into objective information that can be entered into the planning scheme is limited. Analytical and systematic techniques for interpreting and integrating socio-economic data is planning processes are of primary inportance. These techniques must be mastered before the introduction of additional data will have meaningful impacts.

The Role of Socio-Economic Data in Idaho Land-Use Planning[1]

by

Clem L. Pope

and

Ervin G. Schuster[2]

INTRODUCTION

The National Environmental Policy Act of 1969 (NEPA) requires all Federal agencies to consider significant impacts due to implementation of a proposed land use plan (11). The breadth of this mandate has been reaffirmed on numerous occasions. The Council on Environmental Quality issued guidelines governing the content of statements concerning proposed Federal actions affecting the environment stating, in part, that:

> Both primary and secondary significant consequences for the environment should be included in the analysis. For example, the implications, if any, of the action for population distribution or concentration should be estimated and an assessment made of the effect of any possible change in population patterns upon the resource base, including land use, water and public services, of the area in question (2).

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[1]The research reported here is the result of work jointly sponsored by the Intermountain Forest and Range Experiment Station, U.S. Forest Service and the Forestry, Wildlife and Range Experiment Station, University of Idaho.

[2]Authors are graduate assistant and assistant professor, respectively, College of Forestry, Wildlife and Range Sciences, University of Idaho.

Thus, it is clear that Federal planning programs are expected to rest on a broad data base, of a social and economic as well as ecologic nature. The National Environmental Policy Act requires that such data be utilized in the planning and decision making process through a "systematic, interdisciplinary approach" to insure the "integrated use of the natural and social sciences" (11).

The effect of this legal mandate on Federal land managing agencies has been, and continues to be, substantial. Agencies now have legal responsibility to produce a "detailed statement" thoroughly exploring all known environmental consequences, even though this may lead to consideration of effects and options outside the agency's actual control (3). The Council on Environmental Quality stresses that:

> ...the range of impacts which must be considered cannot be limited to the traditional area of agency jurisdiction or expertise. NEPA in essence adds a new mandate to the enabling legislation of all agencies, requiring the development of environmental awareness for the full range of impacts of proposed agency action (3).

Land managing agencies of the Federal government must be aware of possible social and economic impacts that could result from a proposed action. Failure on the part of the agency to consider all reasonably foreseeable impacts, or discussion of these impacts in a perfunctory manner, can result in a charge of non-compliance with NEPA (3). In this context, the availability of relevant social and economic data, and the ability to apply it for planning purposes is of critical importance.

The United States Forest Service (USFS) controls the largest share of the public lands in Idaho (15). This Federal agency recognizes as basic considerations in planning and resource allocation actions, the effect on "economic strength and social well-being" (16). In addition, the USFS has a declared policy to:

> Promote and achieve a pattern of natural resource uses that will best meet the needs of the people now and in the future (16).

Guidelines such as these, necessitate planning programs based on sound and reliable socio-economic information.[3] The Forest and Rangeland Renewable Resources Planning Act of 1974 specifically mandates the USFS to apply a "systematic interdisciplinary approach to achieve integrated consideration of physical, biological, economic, and other sciences" (7). Thus legal requirements, agency policy, and realities of today's growing and often competing demands for the resources of the public lands, make a comparative analysis of alternative uses in terms of social, economic and ecological benefits and costs imperative (14,17). Planning programs at the National Forest level stress the need to relate management programs and activities that utilize the capability of land to produce outputs to needs and desires for those outputs (6,9,13). Complete and accurate socio-economic information is vital if the agency is to satisfy legal requirements, follow agency policy, and achieve effective resource allocation.

All public land managing agencies share similar responsibilities. Legislation, agency objectives, and growing public demands placed on resources of the public lands have caused the decision-making system to evolve

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[3] Socio-economic data is considered synonymous with social and economic data in this report, and refers to facts and figures which explain the structure of society by describing the collective and interdependent members constituting the relevant social grouping, and their mutual utilization (production, distribution and consumption) of the natural resources (social wealth).

from a relatively simple process to a much more complex one (4, 5). A broad array of decision elements, dealing with the human environment in its ecological, economic and social dimensions, must be incorporated into the decision-making process. The inability of the public land managing agencies to successfully enter adequate and complete socio-economic data into the planning process, or the lack of essential data, can result in ineffective resource allocation as well as legally unacceptable decisions.

But what types of socio-economic data are essential to land-use planning? Are they available to planners? Do major roadblocks exist hindering effective application of the data? Can the role of socio-economic data be strengthened to provide for more effective land-use planning? Answers to these questions are important to guide efforts for improving the overall quality of the planning process. The study reported here focused on these considerations as they relate to the role of socio-economic data in Idaho land-use planning. More specifically, the study endeavored to:

1. Identify the relative importance and availability of various types of socio-economic data as preceived by the land-use planners in Idaho; and
2. Investigate and describe the factors within the operational framework of the planning process which control the manner and extent to which socio-economic data is, or can be utilized.

The results presented in this report provide a basis for viewing the current role of socio-economic data in the planning process. In addition, the information has implications with regard to planning direction and initiation of programs to increase the effectiveness of socio-economic data use.

STUDY PROCEDURES

Primary and large scale planning responsibility for the public lands in Idaho reside with several Federal organizations and the State government, the USFS and Bureau of Land Management (BLM) together administer over 60% of the State land area (15). Several other Federal organizations also have planning obligations within Idaho, in addition to various State agencies. Study data were gathered through questionnaire responses from planners associated with these public land managing agencies. Two National Forest regions and fifteen National Forests were represented in the study sample. The State Office and the six district offices for the BLM in Idaho responded to study inquiries. Additionally, offices for the Soil Conservation Service, Army Corps of Engineers, Environmental Protection Agency, Bureau of Indian Affairs, Bureau of Reclamation, and National Park Service were contacted during the course of the study; these organizations are referred to in this report as the "Other Federal" agencies. State agencies with planning responsibilities were represented by the Departments of Parks and Recreation, Public Lands, and Fish and Game. Planners contacted during the study were identified as individuals with primary job responsibility in the area of resource planning, and therefore, assumed to have an intimate knowledge of their organization's use of socio-economic data for planning purposes.

The study involved two phases of questionnaire administration initiated in January and completed in April of 1974. The first utilized a questionnaire in conjunction with a telephone or personal interview. This phase was essentially an attempt to inventory socio-economic data which was currently being used in planning efforts or could conceivably be used. Planners were asked to identify social and economic data which did, or could,

play a role in their planning programs. A total of approximately 150 individual items of socio-economic data were identified. Following this initial exploration, a follow-up questionnaire was developed to determine relative importance and availability of selected data examples previously identified. Forty questionnaires were sent to State and Federal planners throughout Idaho. A total of 35 questionnaires were returned and form the basis of this report.

The study's second-phase questionnaire contained 65 randomly ordered examples of socio-economic data. These data elements were representive of the data most frequently mentioned by the planners during the initial (phase-one) survey. Respondents were asked to rank each data element using the following four point ordinal scales for importance and availability.

Importance Ranking Scale:

Rank 0 -- Not Important: data not applicable or useful in the current process of land-use planning and evaluation.

Rank 1 -- Minor Importance: data used or could be used, however, it is of minor significance, and plays no major role in the planning process.

Rank 2 -- Important: data used or could be used as a significant input to the development and evaluation of land-use plans.

Rank 3 -- Very Important: data used or could be used as a major planning input, playing a very significant role during land-use planning or plan evaluation.

Availability Ranking Scale:

Rank 0 -- Not Available: to the best of your knowledge and/or within your resources for research this data element is unavailable.

Rank 1 -- Possibly Available: availability is questionable for this data element. It could conceivably be located but it would certainly be difficult and necessitate a wide ranging search of potential data sources.

Rank 2 -- Definitely Available: data can be located, there is no question as to its availability, however, aquisition would be more time consuming than data of rank 3.

Rank 3 -- Immediately Available: data is immediately accessible there is no doubt it is in the office and could be located rapidly.

Arithmetic means were calculated for each data element based on planner rankings to facilitate comparisons.[4] Each of the 65 data elements were classed according to type of data. Five categories of socio-economic data were recognized:

1. Recreation -- this category covers data of a recreational nature.
2. Community -- this class is a miscellaneous grouping of data dealing with land use and development as well as growth potential and desire.
3. Population -- this class of data included information of a demographic nature.
4. Income and Employment -- this category covers data dealing with the individual as a wage earner and employee.
5. Industry -- data of this type relates to basic industrial characteristics and production inputs-outputs.

Data elements were distributed among these classes as follows: Population - 10, Recreation - 16, Income and Employment - 14, Industry - 12, Community - 13. Responses were summed over each category to provide a means of identifying relative importance and availability for each of the five classes. This also allowed calculation of the arithmetic mean for each data class. In addition, responses to the questions of importance for these 65 data elements were "factor analyzed" to investigate underlying patterns of response.[5] This statistical technique provided a means of analyzing planner responses and delinating clusters of data elements about which planners most nearly felt the same in terms of importance.

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[4] Ranking distributions, and mean scores for importance and availability of each data element appear by data category in the Appendix.

[5] Factor analysis is a statistical technique for detecting underlying patterns and regularities among a set of variables utilizing their correlation coefficients (8,10,12).

The phase-two questionnaire also contained several questions dealing with the planner's background and the planning framework. A variety of factors which control the extent and manner of socio-economic data use were considered. The planners' responses provide a basis for describing the context within which socio-economic data are applied in planning programs and for formulating guides for improving the effectiveness of land-use planning efforts.

SOCIO-ECONOMIC DATA: IMPORTANCE AND AVAILABILITY

Examining planner perceptions of importance and availability for a variety of socio-economic data can provide insight into the role these data currently play in the planning process. Such information can guide actions toward providing a more complete data base for planning purposes. This section discusses planner responses to questions of importance and availability for the five major classes of socio-economic data recognized by this study. The discussion also considers individual data elements in each data class which are notable due to high importance or low availability, relative to other elements in the category.[6]

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[6] It should be emphasized that the study was dealing with planner *perceptions*. Planners were asked how they *view* socio-economic data importance and availability. Since the results are based on *beliefs*, the relative importance and availability of various types of data revealed by the study should not be interpreted as absolute. For example, the true or actual availability of some types of socio-economic data may be substantially different than planner responses indicate. In terms of planners, this is what *they believe* the importance and availability to be. These beliefs are subject to change. The Forest and Rangeland Renewable Resources Planning Act of 1974 (RPA), which was passed into law after data presented in this report were collected, may be an important factor in this regard. Although the full implications of this Act are not yet clear, it is conceiveable that this legislative mandate could alter the perceptions of USFS planners in terms of what they view as *important* data.

Recreation Data

The sixteen data elements dealing with recreation were the most numerous among the 65 appearing in the questionnaire. The planners ranked these elements consistently high in importance (82% of the importance rankings were 2 or 3) and low in availability (79% of the availability rankings were 0 to 1). These percentages for responses in the upper importance ranks (ranks 2 or 3) and lowest availability ranks (ranks 0 or1) were the highest for any of the five classes of socio-economic data. In addition, Table 1 shows a large proportion (78%) of the responses indicating a specific data element as *important* or *very important* have associated low availability ranks, denoting data considered *not available* or *possibly available*.[7] This indicates that a substantial portion of recreation oriented data perceived as having potentially significant planning implications are not available for current planning applications.

Individual recreation oriented data elements which stand out in this class of data, having high importance and low availability mean scores, are concerned with economic valuation of nonmarket resources.[8] There was strong consensus that this type of information was important but, for the most part, not available. Economic values for wildlife/fishery and aesthetic/scenic resources were, for example, considered as *very important* planning inputs by over 60% of the respondents. Availability of these data was, in contrast, perceived as extremely low. For instance, over 75% of

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[7] Tables 1-5 were tested using the chi-square statistic to determine if dependency existed between planner responses to questions of data importance and data availability. The results indicated that planner responses *were* statistically dependent. Results of these chi-square tests are presented in the Appendix.

[8] For supplementry information on individual data elements please refer to the Appendix, where ranking distributions and mean scores for importance and availability of each data element appear by data category.

Table 1. Recreation Data -- Distribution of planner rankings (in percent) for importance and availability of sixteen recreation oriented data elements.[1]

Importance	Availability: Not Available	Possibly Available	Definitely Available	Immediately Available	Totals for Importance
Not Important	1%	0%	0%	0%	1%
Minor Importance.....	5	8	4	0	17
Important	11	19	9	1	40
Very Important	18	17	6	1	42
Totals for Availability ..	35%	44%	19%	2%	100%[2]

[1] Percentages rounded to nearest full percentage point.

[2] N = 546; total number of rankings for data elements in this category, based on 35 respondents.

the respondents indicated that economic values for aesthetic/scenic resources were *not available*. Projected economic values for wildlife/fishery resources were considered *not available* or *possibly available* by over 80% of the sample.

Community Data

This collection of data included the individual elements with the highest and lowest mean scores among the 65 data elements rated by the planners. As a group, this class was second only to Recreation in the percentage of responses appearing in the upper importance ranks (ranks 2 or 3). Table 2 shows that over three quarters (76%) of the responses were in the upper half of the importance scale, nearly half (47%) were indicating specific data elements to be *very important*. Data availability is not encouraging. A substantial portion (62%) of the responses ranking an individual element as *important* or *very important* have associated avail-

Table 2. Community Data -- Distribution of planner rankings (in percent) for importance and availability of thirteen community oriented data elements.[1]

	Availability				
Importance	Not Available	Possibly Available	Definitely Available	Immediately Available	Totals for Importance
Not Important	2%	3%	1%	0%	6%
Minor Importance	3	11	3	1	18
Important	6	13	8	2	29
Very Important	13	15	12	7	47
Totals for Availability	24%	42%	24%	10%	100%[2]

[1] Percentages rounded to nearest full percentage point.

[2] N = 439; total number of rankings for the data elements in this category, based on 35 respondents.

ability values in the lower half of the scale, indicating data *not available* or *possibly available*. Thus, as with Recreation, a large portion of the data perceived as *important* or *very important*, have limited accessibility, and may not be available.

The data element in this category with the largest percentage of responses (over 80%) in the *very important* rank, deals with "public(s) opinions on relevant management issues". This resulted in the highest mean score for any of the 65 data elements. Other elements gleaning high importance rankings in this data category were "projections of land-use patterns and shifts in land use" and "land area by ownership and land capability class". Approximately two-thirds of the planners felt information

offered by these two data elements to be *very important*. On the other hand, availability ranks were extremely low. About three-quarters of the respondents considered these two data elements as *not available* or *possibly available*.

Population Data

Availability responses for data elements in this category indicate that planners consider population oriented data the easiest to obtain. The percentage of responses in the upper half of the importance scale (ranks 2 or 3) is smaller than for Recreation or Community Data. Table 3 shows

Table 3. Population Data -- Distribution of planner rankings (in percent) for importance and availability of ten population oriented data elements.[1]

	Availability				
Importance	Not Available	Possibly Available	Definitely Available	Immediately Available	Totals for Importance
Not Important	1%	1%	0%	0%	2%
Minor Importance	6	12	10	1	29
Important	4	15	19	6	44
Very Important	4	7	8	6	25
Totals for Availability ..	15%	35%	37%	13%	100%[2]

[1] Percentages rounded to nearest full percentage point.

[2] N = 340; total number of rankings for data elements in this category, based on 35 respondents.

that over half (56%) of all the responses are clustered in the middle of the ranking scales, where data is considered of *minor importance* or *important* and *possibly available* or *definitely available*. Thus, Population Data is characterized by relatively moderate importance and comparatively high availability.

Only one data element, among the ten in the Population category, earned an outstanding mean importance score. "Projections of total population growth" was considered as *very important* by about 57% of the planners. This individual element also had the highest availability mean score of any data element in this data class; over 25% of the planners said that this specific data element was *immediately available*. Most of the remaining elements representing population data displayed the same trends which characterized the group in general; a large percentage of responses in the middle of the importance and availability scales (ranks 1 and 2).

Income and Employment Data

The category of Income and Employment Data had the smallest percentage (8%) of responses indicating a given element as *not available*. Almost 50% of all the responses to questions of data availability were in the upper half of the ranking scale (ranks 2 and 3), as Table 4 reveals. This is second only to Population Data and indicates that data of this type are considered relatively more available than data of a recreational, industrial or community nature. Importance of Income and Employment Data varies between being of *minor importance* and *important*; 82% of the responses are distributed between ranks 1 and 2. Only a small percentage of responses

Table 4. Income and Employment Data -- Distribution of planner rankings (in percent) for importance and availability of fourteen income and employment oriented data elements.[1]

	Availability				
Importance	Not Available	Possibly Available	Definitely Available	Immediately Available	Totals for Importance
Not Important	1%	3%	2%	0%	6%
Minor Importance	3	19	16	2	40
Important	2	17	17	6	42
Very Important	2	5	3	2	12
Totals for Availability ..	8%	44%	38%	10%	100%[2]

[1] Percentages rounded to nearest full percentage point.

[2] N = 458; total number of rankings for data elements in this class, based on 35 respondents.

indicate a given data element as *not important* (6% of the responses are in rank 0) or *very important* (12% of the responses are in rank 3). Data of an income-employment nature are generally preceived as relatively available, but of comparatively minor significance as planning inputs.

No individual element included in this category is a major exception to the general characterization for this data class. The importance and availability responses are primarily distributed in the middle of the ranking scales (ranks 1 and 2 for both importance and availability). This is similar to the class of Population Data. However, data concerned with income and employment display even less ranking variation than population oriented data. Planner perceptions of importance and availability for this type of data appear fairly consistent.

Industry Data

Data of an industrial orientation are not generally considered to be major planning inputs, as shown by Table 5. Only 12% of the responses indicated some data element to be *very important* -- equaling the lowest

Table 5. Industry Data -- Distribution of planner rankings (in percent) for importance and availability of twelve industry oriented data elements.[1]

	Availability				
Importance	Not Available	Possibly Available	Definitely Available	Immediately Available	Totals for Importance
Not Important	4%	8%	3%	0%	15%
Minor Importance	8	22	7	1	38
Important	4	17	12	2	35
Very Important	2	6	3	1	12
Totals for Availability ..	18%	53%	25%	4%	100%[2]

[1] Percentages rounded to nearest full percentage point.

[2] N = 381; total number of rankings for data elements in this category, based on 35 respondents.

percentage of responses in this rank for any of the data classes. In contrast, 15% of the responses denoted individual data elements as *not important*, the highest such percentage for any of the data categories. The remainder of the responses were nearly equally distributed between ranks indicating specific data elements to be *important* or of *minor importance*. As a group, these data were considered as the least important planning inputs. Data availability was also low. Only Recreation

Data had a greater percentage of responses in the low availability ranks (ranks 0 and 1). Over 50% of the availability rankings for Industry Data were indicating data as *possibly available*. Almost 40% of all the responses for this group were identifying data elements of *minor importance* or with *important* planning implications but only *possibly available*.

Individual elements in this class of Industry Data with high importance and low availability, relative to other elements in the class, were "projections of industrial expansion and diversification", "projections of industrial characteristics" and "employment and income multipliers by industry". Each of these data elements were considered *important* to *very important* by at least 63% of the planners, and *not available* or *possibly available* by about 70% of the respondents. When compared to other data elements ranked by planners these three data elements appear relatively unimportant. Nearly all of the data in the classes of Recreation and Community, in addition to several Population elements, have higher mean importance scores than these three top ranked Industry elements. These high Industry Data elements stand out as being more desirable and somewhat less available than other types of industry oriented data.

Overview

In the preceding discussion, planner preceptions of availability and importance have been related to a variety of socio-economic data types. This information is summarized in terms of category mean score and corresponding rank relative to the other data classes in Table 6. This tabulation shows that Population and Income-Employment Data are relatively

Table 6. Mean score and relative rank for importance and availability, by data category.[1]

Data Category	Mean Score		Rank Based on Mean [2]	
	Importance	Availability	Importance	Availability
Recreation	2.21	0.88	1	1
Community	2.10	1.21	2	3
Population	1.87	1.50	3	5
Income-Employment	1.52	1.41	4	4
Industry	1.34	1.14	5	2

[1]The arithmetic means (averages) are calculated from planner rankings for importance and availability based on ordinal ranking scales with the following upper and lower values:
Importance: 3 = very important, 0 = not important
Availability: 3 = immediately available, 0 = not available

[2]Ranks based on descending order of importance (high to low) and ascending order of availability (low to high).

the most available, a not too surprising result due to the wealth of census data in these areas. The classes of Community and Industry rank as third and fourth most available types of data, with mean scores for availability very close together. Recreation had a mean availability score substantially lower than any other class of socio-economic data.

The mean importance scores displayed a slightly wider variation. The classes of Recreation and Community Data earned the highest mean scores, with values over 2, which denotes *important* data. Population had the third highest mean score, followed by Income-Employment and Industry in that order.

Factor analysis, conducted on planner responses to the questions of data importance for each of the 65 data elements, revealed two factor

groups which were exceptionally well defined. The combination of items in these two clusters appeared logically as well as statistically related. This process of statistical grouping reinforced and clarified relationships which were only superficially apparent previously.

The largest and strongest clustering effect brought all data of an industrial, income and employment nature together. This is evidence of an extremely consistent outlook among the planners relative to the importance of these data. It has already been noted that Income-Employment and Industry Data were low in relative importance; as Table 6 shows these classes were fourth (next to last) and fifth (last) respectively. The factor analysis makes it clear that planners share similar outlooks concerning the importance of industry, income and employment data. Planner consensus is that these types of data are relatively low in importance.

The second major factor group is a selective collection of recreation oriented data elements concerned with economic values for non-market resources. Elements clustered in this group all received high importance and low availability rankings. The implication derived from this factor group is that planners share a feeling that economic values for non-market commodities are among the most important socio-economic inputs to the planning process.

Planner preceptions of importance and availability reveal several areas where socio-economic data considered at least potentially important have limited accessibility for planners. Table 7 displays the ten most important and ten least available data elements as perceived by planners. Only sixteen data elements are represented in Table 7. As the table shows, four data elements are among both the ten most important and ten least available. Based on planner perceptions, these four elements, "projections of land-use patterns and shifts in land-use", "projected economic of wildlife/fishery resource", "economic value of aesthetic or scenic resources",

Table 7. Mean score and relative rank for each of sixteen data elements, representing the ten elements with the highest importance mean score and the ten elements with the lowest availability mean score.[1]

Data Element	Mean Score		Rank Based on Mean[2]	
	Importance	Availability	Importance	Availability
Public(s) opinions on relevant land management issues.	2.80	1.00	1	23
Projections of land-use patterns and shifts in land use.	2.66	0.63	2	5
Projected economic value of wild-life/fishery resources.	2.63	0.80	3	10
Economic value of aesthetic or scenic resources.	2.63	0.23	4	1
Land area, by ownership and land capability class	2.60	1.06	5	25
Projections of total popu-lation growth	2.54	2.00	6	63
Economic value of big game resources	2.46	0.71	7	6
Land area, by ownership and use class	2.46	1.54	8	52
Projections of recreational use levels, by activity	2.44	0.97	9	22
Projected development of trans-portation system.	2.42	1.20	10	33
Impact of land management alter-natives on property tax revenues, by types of tax	2.32	0.53	12	3
Recreational use levels, by land owner and activity.	1.89	0.77	28	8
Recreational use levels, by activity and age, sex, race, income and employment	1.88	0.71	29	7
Economic value of game bird resources by species.	1.85	0.58	30	4
Socio-psychological personality profile at resource users, by type of use.	1.82	0.31	33	2
Underemployment rates, by ages, sex, race, income and education .	1.20	0.79	56	9

[1]The arithmetic means (averages) are calculated from planner rankings for importance and availability based on ordinal ranking scales with the following upper and lower values;
Importance: 3 = very important, 0 = not important
Availability: 3= immediately available, 0 = not available

[2]Ranks based on descending order of importance (high to low) and ascending order of availability (low to high), relative to the 65 data elements appearing in the questionnaire.

are, relative to other data elements, the most important and least available socio-economic planning inputs. The types of data represented by these data elements, and others with ranks reflecting relatively high importance and associated low availability, perhaps deserve added consideration during attempts to improve data availability. These are the types of data that planners perceive as significant planning inputs but have limited accessibility for planners. Thus, efforts to improve data availability might be best directed if emphasis is placed on providing those data demonstrating high importance and low availability in terms of relative ranks.[9]

FACTORS AFFECTING THE USE OF SOCIO-ECONOMIC DATA

Numerous factors affect the extent to which socio-economic data are used in the planning process. An obvious factor -- availability of important data -- was considered in the preceding section. In this section two other major factors -- assumptions concerning time and space together with planning expertise -- which affect the planner's ability to utilize socio-economic data are discussed. It is vital that these additional factors be considered in conjunction with data importance and availability to better understand the role of socio-economic data in Idaho land-use planning and to develop more efficient planning programs.

Planning Parameters: Time and Space

Assumptions of time and space are key factors which control the form of input to, and output from, the planning process. Social and economic

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[9] There has been a recent major effort by the State of Idaho to improve the accessability of data relevant to planning and decision-making. The State has compiled and published a "Directory of Idaho Information Sources" to assist planners in local, State and Federal agencies locate data and information needed in planning and decision-making. This source book is available from the Statewide Planning Information Service, Division of Budget, Policy Planning and Coordination, Statehouse, Boise, Idaho.

data must be considered in a well defined geographical and time context. Thus, to be useful, socio-economic data must be based on assumptions of time and space compatible with those made in the planning process. Failure in this regard tends to limit the value of potentially important data since it becomes difficult to fit nonconforming data into the existing planning framework. It is critical, therefore, that planner preferences and assumptions with regard to time and space be recognized.

Responses generated by the study indicate that a majority (70%) of planners feel their basic planning responsibilities are multi-county in scope. Table 8 shows that this tendency dominates in the USFS and BLM

Table 8. Planner perceptions of primary geographical planning responsibility, by agency.

Geographical Level	Agency[1]		
	U.S. Forest Service	Bureau of Land Mgmt.	State and Other Federal
County	13%	0%	0%
Multi-county	87	83	28
State	0	17	44
Region	0	0	28
Total[2]	100%	100%	100%

[1]A total of 28 respondents were distributed among the agencies as follows: U.S. Forest Service - 15, Bureau of Land Mgmt. - 6, State and Other Federal - 7.

[2]Percentages rounded to nearest full percentage point.

portion of the sample. State and Other Federal agency planners relate to a larger geographical area; regional or statewide in scope. A wider range of geographical considerations (national, regional and local) are recognized by all Federal agencies as required by the "multi-objectives" of the Water Resources Council (18, 19). However, in the USFS and BLM, it was generally felt that *basic* planning responsibilities exist at a level where the effects

of a major planning effort and subsequent implementation would presumably be clear and demonstrable.

Table 9 shows that planners generally feel their planning horizon to

Table 9. Planner perceptions of planning horizon, by agency.

Time Horizon	Agency[1] U.S. Forest Service	Bureau of Land Mgmt.	State and Other Federal
0-5 years	22%	43%	10%
6-10 years	33	43	40
11-15 years	23	0	30
Over 15 years	22	14	20
Total[2]	100%	100%	100%

[1]A total of 35 respondents were distributed among the agencies as follows: U.S. Forest Service - 18, Bureau of Land Mgmt. - 7, State and Other Federal - 10.

[2]Percentages rounded to nearest full percentage point.

be less than sixteen years into the future. However, while accepting a planning horizon of fifteen years or less, the planners needed projection data over a much longer time span. A majority (84%) of planners desired a twenty to fifty year time span as a basis for socio-economic data projections. Relatively few planners (13%) felt that projections extending beyond fifty years were necessary or desirable, while the remaining planners felt projections based on a time span of less than twenty years was adequate.

Time and space are flexible parameters which vary depending on the type and objective of the analysis being conducted. It is important that the range of these basic planning parameters be defined at every step of

the planning process, including data collection. The most universally acceptable geographical unit appears to be the county. Data projections must be based on time spans much longer than the accepted planning horizon. Planner responses indicate that socio-economic projections should range between twenty years and fifty years to be most useful.

Operational Considerations: Planning Expertise

Application of socio-economic data will be affected by expertise available to, and involved in, the planning process. A variety of social and economic data, conforming to planning needs and assumptions, could be available to planners; but without skills and methods needed for application, these data may either under or mis-influence planning or decision-making processes. It is important to examine the operational framework of the planning agencies to determine if the capability to utilize additional socio-economic data exists or whether internal barriers would limit effective data application.

Table 10 shows that a majority of the USFS and BLM planners characterize their current use of socio-economic data as descriptive. Over two-thirds of the USFS planners felt their use of social and economic data to be in a descriptive manner. Planners of the State and Other Federal agencies considered their use of this type of data to be both analytical and descriptive in nature. Such a distinction is important. It provides insight into the role of socio-economic data and into the ability of the agencies to apply currently available data. Both descriptive and analytical

Table 10. Current use of socio-economic data indicated by planners, by agency.

Type of Use	Agency[1] U.S. Forest Service	Bureau of Land Mgmt.	State and Other Federal
Descriptive	67%	57%	10%
Analytical	0	0	20
Descriptive and Analytical	33	43	70
Total[2]	100%	100%	100%

[1]A total of 35 respondents were distributed among the agencies as follows: U.S. Forest Service - 18, Bureau of Land Mgmt. - 7, State and Other Federal - 10.

[2]Percentages rounded to nearest full percentage point.

uses of data have valid and important functions in the planning process.[10]

Use of socio-economic data in a descriptive sense provides a planning backdrop. In this manner, potentially relevant social and economic factors can be displayed and brought to the level of planner consciousness. When the ability to enter data objectively into the planning system, by use of analytical methods, is completely absent, descriptive applications remain as the only means of integrating data into the planning process. Such use of data ideally results in an awareness and consideration of the important and sensitive factors. In this type of process, planner subjectivity is paramount. Any influence socio-economic considerations may exert on plan development and evaluation will not be traceable.

[10]There is a certain subjective elements associated with the meanings of "descriptive" and "analytical". Individual planners will tend to define the terms somewhat differently, which may blur the distinction between descriptive and analytical uses to some degree. The distinction is important however, since it may reflect the degree of sophistication shown in an agency's use of socio-economic data.

A combination of descriptive and analytical planning applications will promote the widest and most beneficial range of socio-economic data uses. Systematic and objective use of available data, which allows it to be entered directly into the planning process, through analytical techniques, will provide an effect that is both visible and documentable. Complete and effective planning requires complementary applications of descriptive and analytical techniques for handling socio-economic data.

The inability of the USFS and BLM to use social and economic data in an analytical manner could stem from several conditions. A large proportion (over 60%) of the planners associated with these two large land managing agencies indicated that they had become involved with the planning process within the last five years. In contrast, their association with the agency covered a much longer time span. A majority of the USFS and BLM planners had over sixteen years of agency experience. As Table 11 shows, this substantial lag between joining the organization and assignment of planning responsibilities is not apparent in the State and Other Federal agencies. The likely indication is that the USFS and BLM, faced with a large volume of planning requirements within the last five to ten years, have called upon employees initially involved in other areas of resource management and thrust them into the planning breach. This has apparently not been the case with the State and Other Federal agencies, where personnel may have entered a planning position shortly after joining the organization. A result seems to be that State and Other Federal agencies have planners with adequate experience and background such that they feel capable of using socio-economic data analytically, while the USFS and BLM generally do not.

Table 11. Number of years as a planner and number of years with current agency, by agency.

Number of years	Agency[1]					
	U.S. Forest Service		Bureau of Land Mgmt.		State and Other Federal	
	with agency	as planner	with agency	as planner	with agency	as planner
0-5 years	11%	71%	0%	43%	30%	30%
6-10 years	11	12	0	57	20	20
11-15 years	25	12	17	0	0	10
Over 15 years	53	5	83	0	50	40
Total[2]	100%	100%	100%	100%	100%	100%

[1]A total of 34 respondents were distributed among the agencies as follows: U.S. Forest Service - 17, Bureau of Land Mgmt. - 7, State and Other Federal -10.

[2]Percentages rounded to nearest full percentage point.

Respondents' educational backgrounds were resource oriented. From the standpoint of formal education only a relatively small (23%) portion had training in fields dealing mainly with social and economic types of information, as Table 12 shows. Planners affiliated with the USFS are predominately (78%) forestry graduates. This could be expected since the USFS has a distinct forestry responsibility; it is the traditional preserve of the professional forester. Other agencies maintain a greater diversity of educational backgrounds. This perhaps reflects a broader range of responsibilities. In the USFS and BLM, individuals with backgrounds in handling data of a bio-technological type -- from an educational and experience standpoint -- have been called upon to accept planning duties

Table 12. Degree background of planners, by agency[1].

Type of degree	Agency[2] U.S. Forest Service	Bureau of Land Mgmt.	State and Other Federal
Forestry	78%	28%	30%
Resource[3]	6	42	40
Social Science/ Technical[4]	16	28	30
Total[5]	100%	100%	100%

[1]Tabulation based on bachelors degree. Ten respondents also held masters.

[2]A total of 35 respondents were distributed among the agencies as follows: U.S. Forest Service - 18, Bureau of Land Mgmt. - 7, State and Other Federal - 10.

[3]This degree class includes resource degrees of a biological nature, excluding forestry, e.g., range, wildlife, agriculture...

[4]This degree class includes all social science and technical degrees of a non-biological nature, e.g., economics, landscape art., engineering....

[5]Percentages rounded to nearest full percentage point.

as agency planning functions have increased. When faced with data of a socio-economic coloring, these planners may often lack skills to analytically integrate the data into the planning process. This tends to limit the use of the data to primarily descriptive types of application.

State and Other Federal agency planners also have strong resource oriented educational backgrounds. However, these individuals received more training in social and economic fields than USFS or BLM planners. About two-thirds of the State and Other Federal planners indicated that their university course work included three or more economics courses, this compares to 22% for the USFS and BLM planners. The gap was not so striking, but still present, in sociology where 90% of the State and Other Federal planners took at least one course in this area compared to 60% of

the USFS and BLM planners. In addition, the State and Other Federal planners were immediately involved in the planning process indicating they were probably hired, to at least some extent, for their planning expertise or potential. These planners feel able to use socio-economic data analytically. This possibly reflects their greater familiarity with this type of data and the planning process in general, than their counterparts in the USFS or BLM.

Staffing was considered inadequate to meet current planning demands by over 85% of the planners, as Table 13 shows. Two-thirds of the planners

Table 13. Staff adequacy as viewed by planners, by agency.

Adequacy	Agency[1] U.S. Forest Service	Bureau of Land Mgmt.	State and Other Federal
Planning staff adequate	6%	14%	20%
Planning staff not adequate	94	86	80
Total[2]	100%	100%	100%

[1]A total of 35 respondents were distributed among the agencies as follows: U.S. Forest Service - 18, Bureau of Land Mgmt. - 7, State and Other Federal - 10.

[2]Percentages rounded to nearest full percentage point.

felt that the addition of some social or economic skills to the planning staff would be desirable. This is a major USFS concern, as Table 14 shows. Every USFS planner considering staffing inadequate, also felt addition of some sort of social or economic expertise desirable. The USFS is facing

Table 14. Additional staff skills desired by planners who felt staffing to be inadequate, by agency.

Desired Skills	Agency[1] U.S. Forest Service	Bureau of Land Mgmt.	State and Other Federal
Social -- Economic	100%	33%	50%
Biological -- Resource ...	18	66	25
General -- Technical	35%	83%	62%

[1]A total of 32 respondents were distributed among the agencies as follows: U.S. Forest Service - 17, Bureau of Land Mgmt. - 7, State and Other Federal - 8.

planning pressures and requirements which demand skills in handling data of social and economic natures. These skills are currently lacking on that agency's predominately forestry oriented staff. If socio-economic data are to be applied analytically in the planning process, necessary skills must be developed or acquired.

The BLM is reacting to planning requirements in a manner different from the USFS. BLM planners felt primary staffing needs were for additional resource skills -- mainly wildlife/fishery and hydrology/watershed -- and general technical skills -- primarily in the form of planning coordinators. The BLM's concern with acquiring social and economic expertise is minor compared to the USFS, even though BLM use of socio-economic was characterized as descriptive by a majority of that agency's planners.

It is evident from the discussion thus far, that the USFS and BLM do not have analytical techniques to effectively complement the primarily descriptive uses socio-economic data currently receives. The educational background of the planners, and their relative newness to planning suggests that analytical methods will not evolve without assistance. And, indeed, the USFS planners indicated quite strongly that additional staff is needed in social and economic fields.

Table 15 shows that a majority of planners, regardless of agency affiliation, opt for programs in continuing education which promise to increase

Table 15. Recommendations by planners for future programs to improve the use of socio-economic data in planning, by major data class.[1]

Future Program	Type of data				
	Population	Recreation	Income-Employment	Industry	Community
Research	12%	57%	12%	21%	18%
Continuing education	59	22	67	58	73
Current programs adequate	26	6	15	9	6
Research & cont. education ...	3	15	6	12	3
Total[2]	100%	100%	100%	100%	100%

[1]Based on 33 respondents.

[2]Percentages rounded to nearest full percentage point.

their ability to apply socio-economic data of a population, income-employment, industry, or community nature. Research was considered desirable and recommended by the planners in only one category -- recreation.

Planners displayed a hesitancy to recommend programs in research that would substantially increase the information base. Responses indicate that planners are desirous of acquiring better methods for applying socio-economic data, in lieu of additional data. In the minds of the planners, programs in continuing education are of greater priority than research to generate or provide additional data. Data of a recreational nature is a clearcut exception. Even planners of the State and Other Federal agencies, who indicated their use of social and economic data to be analytical, responded in favor of continuing education. The implication seems to be that planners feel refinement of the methodology for applying socio-economic data is necessary before generation of additional data will become a desirable objective.

STUDY CONCLUSIONS

The study reported here was undertaken to provide a base for viewing current use of socio-economic data in land-use planning. Planners for public land managing agencies throughout Idaho were contacted. Information dealing with the way planners view importance and availability of social and economic data, in addition to the operational parameters dictating application, were collected.

Barriers to complete and effective integration of socio-economic data in the planning process were revealed. There are gaps in both the availability of important data and methods for its utilization in planning

efforts. Planners supported future programs in continuing education for all types of socio-economic data except recreation. Presumably, continuing education is hoped to provide the skills and techniques necessary to use the data in planning programs. A majority of planners lack the education, experience and staffing assistance to integrate socio-economic data into planning and decision making processes in an analytical manner. Some type of assistance is necessary if planners are to develop procedures to apply social and economic data analytically and complement the predominately descriptive use such data currently receives.

What do the results of the study mean in terms of management and research? In the following discussion, some of the important implications are suggested.

Implications for Research

Several factors revealed by the study deserve consideration in research programs designed to improve socio-economic data use in planning. These major considerations are summarized as follows:

1. Recreation Data, especially economic values for non-market recreation resources, are considered the most important and least available types of data. Additionally, this was the only class of data where a majority of planners believed research programs offered greater benefits to their planning efforts than continuing education. This would indicate that recreation research should receive added consideration.

2. Other types of socio-economic data also showed gaps between availability and importance. The relative importance of various data categories and the specific data elements shown in the Appendix can provide a guide for the development of new research to supply potentially useful socio-economic data to the planning process. For example it appears that additional data of the type found in the Community category would be more useful to planners than data of an industrial nature.

3. It is important to realize however, only in the class of Recreation Data, did planners support research programs. This would imply that without assistance, in the form of additional staff or training, programs to supply additional data will have limited value. Current problems in applying data tend to limit the role this type of data can play in the planning process.

4. In view of the preceding point, research programs should make an effort to recognize existing planning constraints -- in the form of educational, experience and staff limitations -- and provide assistance to the planner. Research should not only make the data available, but also concentrate on helping planners relate data to their planning efforts; emphasis on communication and interpretation of results should be strengthened.

5. Development of methods and techniques for analytical use of socio-economic data would appear a valid research-oriented function. Programs of this type could assist planners to more effectively utilize available data and provide the ability to cope with additional data in the future.

6. It is important that research programs recognize the same time and space parameters as the planning process. Without this cooperation research data will not mesh with the planning framework. The county appears as the most appropriate and adaptable geographical unit. Data projections are most useful to planners based on a time span of 20-50 years.

Implications for Management

Management has a responsiblity to comply with existing legislation and consider all impacts on the social, economic and ecological environment which may result with the implementation of a land-use plan. The ability to fully satisfy legal and policy requirements are controlled by organizational, time and budget factors. However, it is incumbent upon the land managing agency to consider all reasonable foreseeable impacts "to the fullest extent practicable" (2). The current ability to handle socio-economic data is limited and must be addressed if legislative directives are to be discharged. Several points reported in this paper have implications for management and

the improvement of social and economic data use in planning:

1. Programs to provide planners with a better understanding of the methods in handling socio-economic data should be supported by management. Continuing education programs received considerable planner support as a means of acquiring skills necessary to apply data of a social or economic nature.

2. Additional staff with expertise in the social and economic fields would be beneficial and provide skills and manpower necessary to apply socio-economic data. Almost all planners referred to the planning staff as inadequate; a large proportion were desirous of additional staff with social and economic skills -- especially the USFS.

3. Management should encourage research in recreation to provide planners with data that is considered important in this area. Planner responses indicated this to be a major area of concern and the desire to acquire additional data appeared substantial.

4. There needs to be an awareness that current planning efforts often lack desirable socio-economic inputs. This is a result of both unavailable data and expertise. From a priority standpoint, it would appear advantageous to provide for methods to integrate socio-economic data into the planning process before encouraging generation of additional population, income-employment, industry and community types of data.

The overriding conclusion seems clear: with the exception of Recreation Data, the role of socio-economic data in Idaho land-use planning is sharply limited by an inability to transform these data into useable planning information. For management, programs of continuing education seem compelled. For research, a renewed committment to communication and interpretation of results is appropriate. Thoughtful programs of relevant research together with expanded efforts in continuing education and research communication should improve the overall quality of land-use planning in Idaho.

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APPENDIX A

This Appendix contains the actual response data, in terms of percent, for each of the sixty-five data elements ranked by the planners in terms of importance and availability. Planners' ranked each socio-economic data element using the following four point ordinal scales:

Importance	Availability
0 - not important	0 - not available
1 - minor importance	1 - possibly available
2 - important	2 - definitely available
3 - very important	3 - immediately available

Arithmetic means have been calculated for each data element to facilitate comparisons. However, since the ranking scales are ordinal, nothing is implied concerning absolute magnitudes. An individual data element with a mean value two times greater than another data element cannot be interpreted as twice as important to the planners (1). This Appendix provides additional data on how planners perceive specific sorts of socio-economic data.

Table 1. Recreation Data -- Distribution of planner rankings (in percent) for importance and availability, plus mean score, for each recreation data element.[1]

Data Element	Importance					Availability				
	0	1	2	3	Mean	0	1	2	3	Mean
Economic value of aesthetic or scenic resources.	0%	3%	31%	66%	2.63	77%	23%	0%	0%	0.23
Projected economic value of wildlife-fishery resource .	0	6	26	69	2.63	37	46	17	0	0.80
Economic value of big game resource.	3	9	29	60	2.46	44	41	15	0	0.71
Projections of recreational use levels, by activity	0	9	38	53	2.44	27	56	12	6	0.97
Economic value of recreation, by activity	3	9	43	46	2.31	29	59	12	0	0.82
Economic value of tourist trade	3	11	37	49	2.31	15	59	27	0	1.12
Economic value of fisheries, by species.	3	14	34	49	2.28	41	35	24	0	0.82
Recreational use levels, by activity.	3	9	46	43	2.28	23	43	23	11	1.23
Economic impact of hunting, by type of hunting	3	14	37	46	2.25	27	56	18	0	0.91
Recreational land values . . .	6	6	49	40	2.22	15	55	24	6	1.21
Recreational use levels, by month and activity.	3	17	40	40	2.17	40	37	17	6	0.89
Recreational facilities, by type, capability and land-owner	0	23	51	26	2.02	11	37	40	11	1.51
Recreational use levels, by activity and age, sex, race, income and employment	3	23	51	20	1.88	47	35	18	0	0.71
Recreational use levels, by land-owner and activity.	0%	31%	49%	20%	1.89	50%	24%	27%	0%	0.77

Table 1. (continued)

Data Element	Importance					Availability				
	0	1	2	3	Mean	0	1	2	3	Mean
Economic value of game bird resource, by species . .	9%	26%	37%	29%	1.85	52%	39%	9%	0%	0.58
Family ownership of recreational vehicle, by type of vehicle and family size.	9	40	29	23	1.37	29	56	15	0	0.85

[1]Percentages rounded to nearest full percentage point.

Table 2. Community Data -- Distribution of planner rankings (in percent) for importance and availability, plus mean score, for each community data element.[1]

Data Element	Importance					Availability				
	0	1	2	3	Mean	0	1	2	3	Mean
Public(s) opinion on relevant land management issues. . .	0%	3%	14%	83%	2.80	23%	57%	17%	3%	1.00
Projections of land-use patterns and shifts in land-use. . .	0	3	29	69	2.66	46	46	9	0	0.63
Land area, by ownership and land capability class . . .	0	6	29	66	2.60	29	47	12	12	1.06
Land area, by ownership and use class	0	6	43	51	2.46	6	43	43	9	1.54
Projected development of transportation systems. . .	0	11	34	54	2.42	17	51	26	6	1.20
Land area, by ownership. . . .	0	12	38	50	2.38	0	12	47	41	2.29
Impact of land management alternatives on property tax revenues, by type of tax.	6	18	15	62	2.32	56	34	9	0	0.53
Forest land ownership, by acerage and ownership class	0	15	35	50	2.14	0	27	32	41	2.35
Real estate values, by land-use class	6	20	40	34	2.03	18	42	36	3	1.23
Transportation system, by mode and use level	6	20	40	34	2/03	12	50	29	9	1.35
Socio-psychological personality profile of resource users, by type of use	14	17	40	29	1.82	74	21	6	0	0.31
Homeownership, by place of owner residence and ownership purpose	35	50	12	3	0.82	22	53	25	0	1.03
Home occupancy, by owner/renter	40%	49%	9%	3%	0.74	9%	66%	19%	6%	1.22

[1]Percentages rounded to nearest full percentage point.

Table 3. Population Data -- Distribution of planner rankings (in percent) for importance and availability, plus mean score, for each population data element.[1]

Data Element	Importance					Availability				
	0	1	2	3	Mean	0	1	2	3	Mean
Projections of total population growth.	0%	3%	40%	57%	2.54	3%	23%	46%	29%	2.00
Projections of urban/rural populations	3	9	57	31	2.17	9	38	38	15	1.59
Population density	0	23	46	31	2.06	6	20	57	17	1.86
Pop. density/concentration by map presentation	3	31	37	29	1.91	17	37	37	9	1.37
Urban/rural population sizes .	3	32	41	24	1.85	9	12	62	18	1.88
Total pop., by age, sex, race and education	3	31	46	20	1.82	0	38	44	18	1.79
In-out pop. migration, by urban/rural classes	6	32	41	21	1.76	25	38	31	6	1.19
Projections of in-out pop. migration	6	34	43	17	1.71	21	53	21	6	1.12
In-out pop. migration, by age, sex, education, income, and employment.	11	31	43	14	1.60	18	46	30	6	1.24
In-out pop. migration, by origin-destination.	14%	51%	29%	6%	1.26	38%	41%	15%	6%	0.88

[1]Percentages rounded to nearest full percentage point.

Table 4. Income and Employment Data -- Distribution of planner rankings (in percent) for importance and availability, plus mean sore, for each income-employment data element.[1]

Data Element	Importance					Availability				
	0	1	2	3	Mean	0	1	2	3	Mean
Projections of personal and family income.	9%	26%	49%	17%	1.74	12%	58%	27%	3%	1.21
Average levels of personal and family income.	6	35	47	12	1.65	0	22	41	38	2.16
Mean and median annual personal income	6	31	54	9	1.66	3	24	55	18	1.82
Origins of family income, by geography and income source	11	37	31	20	1.60	9	50	41	0	1.31
Distribution of annual disposable family income, by income class.	9	37	40	14	1.60	12	47	32	9	1.38
Mean and median personal disposable income	11	31	43	14	1.60	9	52	30	9	1.39
Distribution of annual average family income.	9	43	37	11	1.51	0	42	39	18	1.75
Seasonality of personal and family incomes	11	40	34	14	1.51	12	58	30	0	1.18
Labor force, by age, sex, race, and education.	14	34	40	11	1.49	3	38	53	6	1.62
Unemployment rates, by age, sex, race, income, education. .	17	34	34	4	1.48	3	44	47	6	1.56
Number of family units, by size and income class	17	34	31	17	1.48	6	42	36	15	1.61
Seasonality of unemployment .	9	43	46	3	1.43	0	36	49	15	1.78
Mean annual personal income, by age, sex, race, education.	11	54	29	6	1.28	9	38	47	6	1.50
Underemployment rates, by age, sex, race, income and education.	23%	37%	37%	3%	1.20	24%	67%	9%	0%	0.79

[1]Percentages rounded to nearest full percentage point.

Table 5. Industry Data -- Distribution of planner rankings (in percent) for importance and availability, plus mean score, for each industry data element.[1]

Data Element	Importance					Availability				
	0	1	2	3	Mean	0	1	2	3	Mean
Projections of industrial expansion and diversification	6%	26%	40%	29%	1.91	27%	62%	12%	0%	0.85
Projections of industrial characteristics.	6	29	43	23	1.83	21	61	18	0	0.97
Employment and income multipliers, by industry	9	29	40	23	1.77	18	55	21	6	1.15
Value added, by industry. . .	16	34	41	9	1.44	17	62	14	7	1.10
Value of output, by industrial and size class	20	34	31	14	1.40	9	41	44	6	1.35
Annual payroll, by industrial and size class	23	23	49	6	1.37	13	42	45	0	1.32
Number of employers, by industriarial and size class. . . .	17	43	29	11	1.34	0	28	63	63	1.53
Industrial assets and resources held, by industry.	24	39	30	6	1.18	20	50	30	0	1.10
Annual profits, by industrial and size class	23	57	14	6	1.03	18	76	6	0	0.88
Retail sales, by industrial and size class	34	31	34	0	1.00	10	52	29	10	1.39
Business failures, by industry and size	34	43	14	9	0.97	31	59	6	3	0.81
Industrial characteristics on a monthly basis.	41%	36%	24%	0%	0.82	36%	45%	19%	0%	0.84

[1]Percentages rounded to nearest full percentage point.

APPENDIX B

This Appendix presents the results of chi-square tests for Tables 1-5 in the text (pages 9-16). These tables were tested to determine if statistical significant dependency existed between planner responses to questions of data importance and data availability. The results of these tests are shown in the following table. A strong dependence between

Table 1. Calculated chi-square values and associated degrees of freedom for Tables 1-5 of text (pages 9-16).

Table Number and Title	Calculated[1] Chi-Square	Degrees of Freedom
1. Recreation Data.....	15.95	6[2]
2. Community Data.....	28.95	9
3. Population Data.....	43.55	9
4. Income and Employment Data.....	35.36	9
5. Industry Data.....	23.52	9

[1]These calculated chi-squares are all significant at the 1% level (dependency exists).

[2]Due to numerous small (less than 5) experted cell values, row one (data *not important*) was deleted to insure a valid chi-square for this table.

responses for availability and importance is indicated in every case. It is impossible to state with certainty the direction of this dependency, that is whether availability is dependent on importance or vice versa. It does, however, demonstrate a significant link between planner perceptions of data importance and data availability.