The Computer and the County Agent

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The computer and the subsequent data banks are entering more and more into the life of the Extension professional. This study shows that there are certain issues involved in establishing a data bank that will be useful to Extension staff as they carry out their educational responsibility. The author suggests that the data system planners must survey the Extension personnel to determine their needs and then help them use the data and analytical skills available. If you have wondered how data banks might be useful to you, you will enjoy reading this article.

Introduction

For a variety of reasons, Extension staff are discovering the need for access to more and better secondary data. Whether the data are needed to keep informed of the changing characteristics of the state or area in which they work or for providing information to local government or planning units, it's imperative that the data be accurate, current, easily obtainable, and useful.

For this purpose, data retrieval systems have been established to collate existing data, provide quick access to this and to other currently available secondary data, and offer help in data interpretation and application.

How well these data systems will operate on behalf of state Extension staff depends on a range of factors: from continued funding for such projects to the demands for data from non-Extension personnel to the communication channels that develop between data system administrators and users.

If data retrieval systems are to become institutionalized, ongoing enterprises, information must flow from data collectors to data users, and in the reverse direction. Extension staff must

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communicate, for example, the usefulness of certain types of data and enumeration units, the data demands made on them by their clientele, and their current and proposed use of secondary data.

Without an interchange of problems and needs between users and collectors, there will be the tendency, on the one hand, to make extravagant claims for social indicators and data banks, and, on the other, to have expectations that are never fulfilled.

Survey's Purpose

Data Need and Use

It's in this context that this article is written. It reports on a survey designed to determine for a specific data user-group, Illinois Cooperative Extension staff, what secondary data they use, what data are needed, and what data aren't useful.

The information on which this article is based was originally collected with the hope of making some recommendations about the collection, storage, and use of census-type data by the University of Illinois College of Agriculture for Extension personnel.

At present, Illinois county and area Extension advisers represent one of the more visible, easily identifiable groups of census-data users in the state, and would certainly be a primary user of a proposed data system. The survey results, however, have implications for Extension staff and data systems in other states—especially those where such systems anticipate heavy use by Extension staff.

Audiences

This article is addressed to two audiences: Extension staff and administrators, both in Extension and in Colleges of Agriculture. At a general level, it's hoped that the research reported on will act as a stimulus to force Extension staff into carefully considering their data needs, uses, the problems they have with interpretation and application of data, and the way enhanced data accessibility may alter the roles they've traditionally played.

Extension staff in other states may wish to assess their needs, uses, and problems in light of the findings from Illinois. If sufficient consensus can be reached on some of these problem areas, they might well become topics to incorporate into in-service and workshop groups.

Multidimensional Data Retrieval

More specifically, though, the present research carefully outlines and provides the reader with a set of mental categories detailing the different types of data available, the different enumeration units for which data are published, types of population breakdowns, some possible personal

and nonpersonal uses of data, the difference between analytical and descriptive uses, and the potential relationships of data to problems. While this wasn't the explicit purpose of the study, several respondents felt that the choices they were presented with in the questionnaire stimulated thinking about the multidimensional aspects of data retrieval and use as well as structured their thinking about data sets and requests.

One of the latent effects the study has had among many Illinois Extension staff has been the elimination of the vague request for "all the data you have." And, obviously, specific, operationalized requests are more easily and quickly filled. So, at a minimum, it's hoped this article will introduce potential data users to the terminology of data systems and expand their conceptions of what's possible.

On the basis of data presented in this research, administrators should have a clearer idea of the types of demands Extension staff will make on a proposed data system and the types of role changes that may occur as a result of increased accessibility to data.

A wide range of questions normally arises when data retrieval systems are being created with the expectation that Extension staff will be a primary user: What role is Extension expected to play in terms of data use? What types of data and units of enumeration are most helpful? To what uses are data put, and how will the adviser's role change if he has better access to more data? Is present data availability adequate for most Extension staff purposes? Is it desirable to expand their use of data, and if it is, how is this to be accomplished? Should Extension staff be required to compete with other potential users of secondary data.

The present challenge for administrators and Extension staff alike is to address these questions concerning need, use, and role change, and especially in the context of the costs of setting up a data bank and the possibility of competing users.

Assumptions

There are two assumptions underlying the present research. First, any proposed data delivery system ought to try to determine who its clientele are or will be, and their current and anticipated data needs. Second, there ought to be an understanding of present data use-patterns and of the need for an instructional component in the system that functions to expand data uses, define new data applications, and, if necessary, redirect current data uses. These few considerations are the basis for this article. Hopefully, what is learned will provide a framework on which user-oriented data

banks might be developed and unnecessary accumulation of data avoided.

Sample

Questionnaires were sent to the following Extension personnel in Illinois: all Extension advisers (agriculture), Extension advisers (home economics), and area advisers in farm management and community resource development. The response was excellent: 142 completed forms were returned (68.7%). The following analysis is based on these returns.

Findings

Current Use and Usefulness of Census-Type Data

To determine use, and usefulness, of a variety of types of secondary census data, we asked for a "Yes-No" response to the 11 frequently used types of data: population characteristics, housing, employment/occupations, residence, income, education, vital statistics, migration, business/commerce, general agricultural information, and agricultural production.

On the basis of the response, there appears to be use and/or need for all of these types of data, but certain types are required more than others. In order, they are: (1) general population characteristics, (2) residential information, and (3) income-poverty data. More than 80 percent of the respondents indicated that they used the above types of information. Business data and vital statistics, while useful to more than half of those responding, appear to be two lesser used types of data.

Utility of Data Enumeration Units

Census-type data are generally available for different units of enumeration. For each of the frequently used types of data listed under Section A, respondents were asked to designate the unit they felt to be most helpful. The choices of units were as follows: crop reporting region; county, incorporated place; township; census tract area; zip code area.

For each category of census data, the county is the most useful unit for data collection; the township is the second most useful. Half or more of all respondents said the county was the most useful unit of enumeration, regardless of the type of data. About a fourth felt the township was the useful unit. Even for agricultural data, township enumeration units were felt to be more useful than crop reporting regions or any of the other units suggested. Incorporated place was the third preference of enumeration units.

There are, in addition, other population breakdowns (Census "Record Types," in the 1970

Census) that are possible for several of these different units: race, residence, ethnic group membership, and sex.

The response to another item in the questionnaire indicates a preference by Extension staff for data broken down according to urban, rural, and rural-nonfarm residential categories. Sixty-one percent felt that was the most useful categorization. The next preferred designation was for data broken down by sex (44%).

On the basis of the above responses, a data-system recommendation was made that various types of social and economic data be collected for rural, urban, and rural-nonfarm portions of Illinois counties.

Data Uses by County and Area Advisers

An individual adviser's use of census-type data may vary widely, but generally the data either help him personally to identify problems, determine changes and trends, justify existing or new programs, or assist him in supplying data to his various clientele. In addition, when it came to personal use, advisers indicated there were both descriptive and analytical functions of data, the former characterized by use of data simply to describe conditions, or to make extrapolations to future conditions. A more analytical use of data would consist of using data to verify hypothesized conditions and program needs, become sensitized to emerging problems, or, perhaps, suggest solutions for problems.

The findings in the study indicate that the use of secondary data by Extension staff is defined largely in terms of personal needs. In response to a set of questions about exact uses of data, 79 percent of the advisers said they primarily used data to determine their program needs and changes, and to help them keep up with changes in their state and area. Lesser mentioned uses were providing information to: local governments (4%), businesses or commercial groups (5%), planning and development groups (5%), and individuals requesting information (7%).

When asked to designate their most important use of data, four out of five specified personal use. No more than 10 percent of the respondents felt that any one of the nonpersonal data uses constituted their primary data role. The implication of these findings may be that actual involvement by Extension staff in a data system won't obviate the utility of the system to other user groups. Extension isn't widely diffusing data among potential users.

Generally, Extension advisers use data to describe existing socioeconomic and demographic conditions (53%) and changes that are taking place (44%). Very few use data to make forecasts and predictions (26%) or to advise on project feasibility or success (28%).

The limitations of solely descriptive uses are pointed up in advisers' responses to a question about topics Extension staff would like to see included in a short-course on data use. Invariably, the topics they suggested were "data interpretation" or "data applications." There was a strong willingness to go beyond descriptive use of data, but the respondents lacked the expertise to do so.

Using Data to Identify Problems

It is often suggested that increased access to social data enhances the possibility of early identification of problems and suggests solutions to problems through new programs. Extension advisers felt data was useful for: identifying problem areas (91%), verifying the existence of problems (83%), and suggesting possible causes of problems (67%). However, relatively few (38%) felt that census data were capable of suggesting solutions to problems.

Current Sources of Data

Extension advisers currently acquire census-type data from four main sources: direct mailings—72 percent, state universities—71 percent, state agencies—67 percent, and other Extension personnel—66 percent. Less often used sources are libraries—20 percent, planning and development groups—38 percent, and data dissemination organizations—13 percent. However, when the advisers were asked to designate the source most frequently used, a slightly different picture emerged: direct mailings from the Census Bureau and state agencies are the sources most frequently used.

Clearly, data system planners ought to be aware of users' present sources of data and of the range of data currently available from the many governmental and planning groups generating information. At a minimum, these findings will permit a decision on the costs involved in establishing a system that may be only slightly better than currently available data reports, assuming, of course, certain types of usage.

Access to Present Data

Most (73%) of the Extension advisers indicated their present access to census data was insufficient for dealing with their data needs, uses, and the requests they received for data.

About half (54%) felt that expanded access to secondary data would permit flexibility to do their jobs in different ways. However, the ways they suggested their jobs would be altered indicated that they'd more than likely continue doing what they presently do. They indicated that expanded access to data would "improve accuracy," "permit me to support theories with fact," "localize needs and problems," "keep more in

touch with present conditions," "substantiate need for programs," and "provide more free time."

A few advisers, though, felt increased access to accurate data would permit task innovations: "become more involved and exert influence in dealing with planning and resource development groups," "start providing data for local governments," or "conduct public affairs programs."

Many respondents felt that availability of new data would increase their efficiency in providing data they're frequently called on to supply. In response to a question concerning the length of time they generally had between requests received and date of actual data need, 41 percent indicated they received no data requests. This is consistent with other earlier findings that indicated data were most frequently used for meeting personal needs of Extension advisers.

For those indicating they received requests, and who specified a length of time in which they'd need to receive data (46% of the sample), it was determined that a period of *two weeks* (average of 13.9 days) would be enough time for most Extension advisers to meet data requests they received. For Extension staff, at least, it appears there isn't as much need for immediate retrieval of data as data bank planners would assume.

Ultimately, use of census-type data is limited by: (1) inadequate knowledge of where certain types of data can be obtained and (2) inability to interpret the data one has or will have access to. These limitations were frequently mentioned by advisers who indicated they'd like to see these two areas covered in a short course. More than half (54%) felt that such a short course would help them in their work.

The need for an instructional component to complement the availability of and access to data continues to reappear. An outline of one type of instructional component has been presented elsewhere.[1] At a minimum, it should include, in addition to a basic understanding of how data are collected, stored, and classified, an understanding of some of the issues of valid social measurement, the determination and meaning of trends, and the basics of problem identification and social forecasting. There presently exists a considerable amount of literature in each of these areas.

Conclusions

In discussions of data systems, the concern has been generally with the meaning and use of particular items of information, retrieval rates, opportunities the data present for "comparative analysis, theory testing . . . and the generation of new hypotheses,"[2] or with the opportunities data present for making long-term projections, evaluating alternative

programs and policies, identifying priorities, and providing support for decisions made on the basis of other criteria.

Enthusiasm over advanced techniques for storing, retrieving, and delivering such data has proliferated retrieval systems, along with the belief that the mere possession of such data will somehow solve all program and policy issues and revolutionize the activities of those to whom data are available. Too often, extravagant claims for data banks have obscured the possibility that a vast quantity of stored data could be nonuseable, nonproductive, or as far as the user's role is concerned, noninnovative.

The Cooperative Extension Service is no less immune to the data bank promise than the academic community. On the surface at least, the promise manifests itself in expectations that better access to more data is the answer to all ills.

One way of determining the utility of certain types of data, and the effect increased access is likely to have on the user's work activities, is to survey data requirements of potential users and tailor data systems to their needs.

In setting up a data bank system designed for a specific group, such as county Extension advisers, the above findings and recommendations should be considered to enhance their use of data. While the above set of topics relates to Extension's use of a proposed data retrieval system, it can, in modified form, be applied to other user groups as well.

As Taeuber suggests,

> Statistical data clearly do not just happen. Careful choices must be made in selecting the items of information to be assembled and in determining the ways they are to be collected.[3]

To this it might be added the knowledge of the limitations and needs of potential data users might provide the context in which a data system can be made a truly functioning tool rather than a mere congeries of facts.

This article has attempted to specify for a specific user-group, some data needs, uses, and nonuses, as well as suggest ways for enhancing data use. Hopefully, information of this sort can serve as a basis for making choices that will produce a data system more closely attuned to needs of potential users.

The start-up and recurring costs of a data retrieval system are quite high. The success of such systems may depend less on how widely they are used by Extension staff and more on how effective they are in attracting other clientele such as planning groups, local government units, private organizations, or university faculty.

For Extension staff and administration alike, the burden of proof for needing a relatively exclusive data system is great. The

present findings lead one to conclude that while on the surface there appears to be widespread need for and use of census-type data by Extension staff, on closer examination there is rather limited use of secondary data and a related uncertainty about how to use what's available.

Given these constraints, better access to more data isn't likely to appreciably alter advisers' roles, expand their contacts with nontraditional clientele, or facilitate decisionmaking and problemsolving.

This isn't to say that Extension staff can't assume the role of data user and disseminator. There are many opportunities for using such skills, especially since many advisers are coming into contact with new groups and organizations that have traditionally used census-type data with a certain amount of expertise.

However, more than data access will be required to bring the skills of advisers up to the level where they can work with local governments or planning and development groups. It appears that, at least as far as Extension staff are concerned, data retrieval and access functionally depend on an instructional component that teaches new data uses and analytical skills.

Footnotes

1. Andrew J. Sofranko and William M. Bridgeland, "A Community Structure Approach to Data Collection and Recommendations for Use of Data Banks," *Journal of Community Development Society*, III (Fall, 1972), 110-28.
2. David Nasatir, "Social Science Data Libraries," *The American Sociologist*, II (November, 1967), 208.
3. Conrad Taeuber, "Providing Relevant Data," *The American Sociologist*, VI (June, 1971), 62-65.