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CONTRIBUTED PAPERS

BUSINESS AND ECONOMICS

Saturday, April 19, 9 - 11 a.m.

Earle Brown Center - 135A

9:00 RURAL COMMUNITY ASSESSMENT: TOOLS AND PROCESSES

Dave Brennan, Lorman Lundsten, Vania Meyer, and Jack Millitello, University of St. Thomas, Mail #MCN6007, 2115 Summit Ave., St. Paul, MN 55105

Rural communities in Minnesota and nationwide are facing numerous demographic, social, political, and economic challenges. Community assessment tools and processes are needed to provide benchmarks of community health for future comparisons. This paper reports the results of a pilot project for which community assessment tools were developed and refined.

Individual interviews, focus groups, and a literature survey were used to identify seven dimensions useful in highlighting and evaluating community characteristics. The dimensions captured residents' perceptions of healthy compared to less healthy communities. The dimensions included: economic opportunity, education, services and information, recreation and cultural opportunity, safety and security, environmental stewardship, and community leadership. Items were developed for each dimension which focused on assets that are strategically important and change agents. The final instrument consisted of 45 items divided among seven dimensions.

The community assessment process was developed by the project team based on input from community members, models of community development, and consultation with community development experts. An objective of the process was that it empower the communities which participated. To be successful, the community assessment must be informative, inclusive, catalytic, and motivating. The pilot program is current being fielded and results of the field test will be discussed.

9:20 THE LONG-RUN PERFORMANCE OF ADRS

Thadavillil Jithendranathan, Department of Finance, MCN 6057, University of St. Thomas, St. Paul, MN 55105

In this paper we study the long-run return performances of American Depository Receipts (ADRs). The dollar returns for ADRs and home country stock indices are examined over a five year period between 1990 and 1995 for 284 ADR from 21 countries to estimate the excess returns. Our results indicate that ADRs on the average outperform the corresponding country index, but the degree of outperformance measured by excess returns gradually decline over time. These results are similar to the results found by Ritter (1991) in his examination of IPO excess returns in U.S. Long-run performance by individual country ADRs indicate that ADRs from countries with relatively small capital markets outperformed their country indices by a larger margin than ADRs from countries with large domestic capital markets.

9:40 THE DIALECTIC BETWEEN TEACHING ACTIVITY MODES

Daniel E McNamara, University of St. Thomas, Dept. of Management, MCN 6064, 2115 Summit Ave., St. Paul, MN 55105

This paper examines the instincts for order and informal pragmatism as foundations for teaching activities. The examination covers definitions, aggression in these instincts, validity, and the results of the application of unlimited order and unlimited action in educational institutions. The results of the tensions between these modes are demonstrated and discussed. These tensions result in educational institutions which can not learn and cannot judge. These tensions also

result in educational institutions which either become totally rigid or completely chaotic.

As a conclusion, the need for a true synthesis of these modes is demonstrated and the dimensions for this synthesis are presented. These include

- A. The view of the environment
- B. The method of operation
- C. The method of organization
- D. The form of leadership practice

Finally, alternative teaching models based upon this dialectic are given.

10:00 SOIL CONSERVATION: DO TENURE OR PERCEPTION OF SOIL EROSION MATTER?

Kate O'Connell and Fabima Aziz, University of St. Thomas and Hamline University, Hamline University, 1536 Hewitt Ave, St. Paul, MN 55104

This study examines whether tenure status (owner vs. renter) affects the use of certain soil conservation practices. Farm operators reported the use of six different soil conservation methods conservation tillage, contouring, grassed waterways, ponds, rotations, and terraces. Loglinear analysis of the data indicated that owners were significantly more likely to use contouring and rotations. There was no significant difference in the use by renters or owners of conservation tillage, grassed waterways, or ponds. Owners were more likely than renters to use terraces. The study used survey data of Olmsted County, Minnesota.

10:20 PAST, PRESENT AND FUTURE OF ACTIVITY BASED ACCOUNTING

Dr. Shirley A. Polejewski, University of St. Thomas 2115 Summit Ave., St. Paul, MN 55105

Users of the system of Activity-based Costing (ABC) have gone through three generations of accounting since the traditional cost system that was and is in existence from the 1980s. The first generation of the ABC system focused on product costing, the second generation focused on process costing or performance evaluation and the third generation of ABC focused on value chain costing to be used in strategic analysis. All three generations use the same activities data base; the difference lies in the types of linkage and the extent to which data on activities are gathered.

What now appears that there is a need for a system that would link activities between business units and this system would provide information for the company as a whole. Although this may sound complicated and it is, the ability to link activities in such a manner that these activities could be accumulated and analyzed over business units would be within the realm of current technology.

GEOGRAPHY

Saturday, April 19, 9:00 - 12:15 p.m.

Earle Brown Center - 135B

9:00 FOREST AND LAND COVER CLASSIFICATION OF THE TWIN CITIES METROPOLITAN AREA WITH LANDSAT TM DATA

Marvin E. Bauer, Steven J. Steinberg, and Carol A. Sersland, Department of Forest Resources, University of Minnesota, St. Paul, MN 55108

Historically remote sensing in the form of aerial photography has been an important source of land cover/use information for resource management, and local, regional and state land use planning. An alternative, investigated in this paper, is the use of satellite imagery. In studies with the Twin Cities Metropolitan Council and Minnesota Department of Natural

Resources (DNR), land cover classifications of Landsat Thematic Mapper (TM) data acquired in June and September 1991 were classified. A key part of the approach was to stratify the area into three physiographic strata prior to training and classification. The overall classification accuracy of nine level II classes was 83%, with a Kappa coefficient of 0.80. In a second classification of the areas classified as forests, seven forest species classes were classified with an overall accuracy of 63%. The results are being used by the Metropolitan Council and the DNR as a source of land cover information for the Twin Cities area. The synoptic view of the satellite sensor provides coverage of large geographic areas, the classifications have the same scale and classification scheme over the entire area, and the classified data are readily compatible with geographic information systems of the Council and DNR, eliminating the need to digitize interpreted information

9:30 DEMOGRAPHIC PROJECTIONS FOR THE EAST METRO AREA, 1990 TO 2020

Kent Treichel, Wilder Research Center, 1295 Bandana Blvd. N, Suite 210, St. Paul, MN 55108

The East Metro area (Dakota, Ramsey and Washington counties) will see substantial growth and change over the next 25 years. In order to plan for the impacts of these changes, projections are made to form a basis of what the demographic makeup of the population might be. These projections aid policy makers and citizens in planning for the services and needs of the population. This presentation will focus on the considerations and the data that make up the demographic profile for the East Metro area.

10:00 MODELING FIRE STATION RESPONSE TIMES WITH NETWORK ANALYSIS

Joel Little, University of St. Thomas, 2115 Summit Ave, Saint Paul, MN 55105

The focus of the presentation will be the explanation of how a Geographic Information System may be used to project travel times throughout a network of streets. This presentation stems from a pilot project whose objectives were to explore considerations involved with network-based modeling. Real-world data from Savage, Minnesota and the results of the initial project will be presented. The body of the presentation will include a step-by-step description of what is needed to complete a network analysis, the sources that were used for the project being presented, and an explanation of network analysis as a function of time, direction, and distance.

10:30 BREAK

10:45 UTILIZATION OF A GIS FOR AN ENVIRONMENTAL SENSITIVE LAND USE PLAN, ZONING AND SUBDIVISION ORDINANCE

Dr. Robert O. Bixby, AICP, Director, Spatial Analysis Research Center, St. Cloud State University, St. Cloud, Minnesota

The town of Rockville is located adjacent to the south-west corner of the City of St. Cloud in Stearns County Minnesota. They have an existing zoning ordinance enacted in 1971. Growth of single family residence dwellings has been steady between 1970 and 1990. Growth between 1990 and 1994 exceeded the 1980 - 1990 period. In the fall of 1995 the Town approached St. Cloud State University to assist in the development of a new structure and approach to planning. (The current buzz word for this is Sustainable Development.) The resultant planning process provided an environmentally sensitive base with the geography of existing land use, soil productive hydro-geologic atlas and other environmentally imperative objective criteria, i.e., digital ortho quarter quads (DOQQ's) as well as digital raster graphics of elevations are used. The result is be a set of ordinances that will guide the Town into the next century, all based upon data analyzed with a GIS to include subdivision design interactively based.

11:15 THE RELATION OF HOMICIDES TO DEMOGRAPHY IN MINNEAPOLIS

Seth Potter University of St. Thomas/BRW, Inc, BRW Inc, 700 Third Street So., Minneapolis, MN 55415

This project is study of the relation of homicides to demography in Minneapolis in 1995. Using homicide data from the Minneapolis Police Department, spatial data from the Census Bureau, and attribute data from Strategic Mapping Incorporated, I geocoded the addresses from the homicide data file to the address in the Census Bureau's street files. The results of the geocoding are points that represent the locations of the homicides. Once the point file was created I overlaid the points on the census data from which I was able to relate the points to several variables such as income, race, and age. All the variables have the geography of block groups from the census TIGER files. The result is that we can make a demographic profile of people who live near homicides and compare it to the general population. This enables me to address questions of whether or not race, age and income vary with proximity to homicides.

11:45 DOES ENVIRONMENTAL QUALITY VARY WITH RACE, AGE, AND INCOME IN THE TWIN CITIES?

Dr. Robert Werner, University of St. Thomas, LOR 306, 2115 Summit Ave, St. Paul, MN 55105-1096

Are minorities, the poor, the young or old exposed to more toxins and pollutants than the general public? Such questions are usually termed "environmental equity" or "environmental justice."

This study compared race, age, and income in areas that were near or far from toxic releases in the Twin City metropolitan area. The study used 1995 demographic estimates for measures of race, age, and income. As a measure of environmental quality, the study used the Environmental Protection Agency's Toxic Release Inventory data (TRI) for all toxins released into the atmosphere over a two year period. The TRI data was first corrected for positional inaccuracies.

The data was analyzed with a Geographic Information System (GIS) and statistical methods of hypothesis testing. Buffers were created around toxic releases, whose size varied according to the quantity of toxins released. A GIS overlay was performed that intersected demographic data with the buffers and aggregated that data inside and outside the buffers. Statistical tests were performed that calculated whether or not the numbers of toxic releases were significantly different according to whether people lived inside or outside the buffers. The results help answer questions of whether or not environmental quality varies with race, age, or income in the Twin City metropolitan area.

Various maps were created to help communicate results and explain spatial relationships between toxic releases and demography. Turning on the waterways, railroad, and highway layers helps explain why toxic releases occur where they do and suggests that an historical development of industrial patterns is necessary to explain spatial patterns between toxic releases and race, age, and income.