

THE UNIVERSITY OF MANITOBA

MEASURING THE SPATIAL EFFECTIVENESS OF PUBLIC
ADMINISTRATIVE SYSTEMS: AN EVALUATION
OF THE MANITOBA DEPARTMENT OF HEALTH AND
SOCIAL DEVELOPMENT'S DELIVERY OF INCOME
SECURITY SERVICES THROUGH THE WINNIPEG
REGIONAL OFFICE SYSTEM

by

JOHN KENNETH WILKINS

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the University of Manitoba in partial fulfillment of the requirements
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ABSTRACT

Geography can be a useful component in the government planning process. However, a more meaningful and comprehensive approach to planning the geography of public administration is required. In particular, concepts and measures of spatial effectiveness, a geographical quality indicating how adequately an administrative system fulfills the spatial attributes of public goals, should be defined and applied.

The intention here is to examine the mechanism for measuring the spatial effectiveness of a public administrative system. This is attempted in a case study of the Manitoba Department of Health and Social Development's delivery of Income Security Services through the Winnipeg Regional Office System.

The research reveals that more comprehensive measures of spatial effectiveness, embracing elements of accessibility and the population in need of services, should be devised. It is also concluded that these measures should only be preferred as initial indicators for planning purposes due to inherent assumptions and limitations.

In the case study, it is recommended that the Manitoba Department of Health and Social Development pursue data reform, comparative evaluation and more rigorous geographical planning. This research is only suggested as a starting point for further geographical studies and government planning.

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CHAPTER 1 INTRODUCTION

Geography can contribute to the planned development of public administration in two ways. First, geographers formulate and test hypotheses about the spatial organization of administrative systems. Second, geographers assist government decision-makers by applying geographical theory to resolve real-world organizational problems. The latter involves the evaluation and planning of administrative regions, boundaries, facilities and networks. The aim is to improve the effectiveness and efficiency of these systems.

Effectiveness and efficiency are optimal standards established by the full array of decision-makers in government and society. Effectiveness is a quality indicating how adequately an administrative system fulfills public goals. Governments promote effectiveness to enhance the relationship of administrative systems to the public. The intention is to fulfill public goals by offering a suitable level and quality of service delivery wherever there is a demand for services.

Efficiency is itself a public goal and therefore, is part of the broader concept of effectiveness. It is a quality indicating how adequately an administrative system carries out the work processes necessary to fulfill other public goals. Governments promote efficiency to minimize the cost of operating

administrative systems. The intention is to protect the public's fiscal interests by economizing expenditures.

Society demands that public administration be both effective and efficient at the same time. In practice, governments attempt to strike an acceptable balance between these dual objectives. Government must reconcile what is suitable to public needs with what is feasible in the realm of administrative capabilities. Without the constraint of economic efficiency, the price of fulfilling many of society's goals would probably be prohibitive for the public treasury. Similarly, without the effective fulfillment of society's goals, public discontent or alienation would probably overshadow the economic endowments of efficiency.

Consumer advocate Ralph Nader has recently called for a re-assessment of current government planning priorities. He observes that, "Although consumers are able to obtain performance information on cars, toasters and restaurants, they seldom have access to data that tells them if an organization helps them achieve personal goals." (Dennison, 1974:10). Nader contends that governments should be more accountable and responsive to society's needs and interests. He recommends ongoing or periodic evaluation of government administrative systems as a means to monitor and control the effectiveness with which public goals are fulfilled.

It is to this end that this research seeks to

evaluate the spatial effectiveness of a public administrative system. Spatial effectiveness is a quality indicating an administrative system's ability to fulfill spatial goals. Spatial goals are fulfilled when the spatial attributes of public goals are optimized in an objective function. In this way, the current spatial structure of an administrative system is compared against an optimal structure based on the system's spatial objectives. The degree to which a predetermined set of spatial goals is realized demonstrates the system's spatial effectiveness.

Objective

This research has two primary objectives. The first objective is to evaluate the spatial effectiveness of a public administrative system using a case study. The intention is to identify the system's spatial goals and to measure the effectiveness with which these goals are administered. The second objective is to examine the mechanism for measuring the spatial effectiveness of this administrative system. The intention is to investigate the analytical problems and deficiencies associated with this form of evaluation. There is no attempt to develop planning decisions around the system's geographical problems or to propose new methods for measuring spatial effectiveness. Instead, the research seeks to understand some of the applications and

limitations of utilizing measures of spatial effectiveness.

The administrative system used for the case study is the Winnipeg Regional Office System (W.R.O.S.). This system is one of seven regional service administrations established by the Manitoba Department of Health and Social Development (H. & S.D.). It is responsible for delivering a comprehensive range of health and social services to the Winnipeg Region, including financial benefits called Income Security Services provided under the Social Allowances Act. The Winnipeg Region is comprised of the metropolitan area of the City of Winnipeg, plus the Rural Municipalities of East St. Paul and West St. Paul.

Over the past few years, H. & S.D. has established a specific set of spatial goals for regional service delivery. Through a process of re-organization, the Department has attempted to maximize the accessibility of services to the demand population, while meeting the service needs of that population, wherever needs occur. In order to fulfill this objective, service facilities delivering the total complement of the Department's community services have been located at central points in each service area. As a result, there has been a progressive decentralization of facility locations to the community level.

To date, this service objective has not been fully

realized in any of the Department's seven administrative regions. However, only the Winnipeg Region has strayed significantly from the original re-organizational concept. Instead of establishing an integrated set of total-service, community-based facilities, three distinct spatial systems have evolved. Disjoint sets of facility locations and intersecting service areas partition the delivery of Income Security Services from other service programs in the Winnipeg Region.

The fulfillment of the Department's service objective is particularly important for W.R.O.S. First, more than half the Province's million population and a greater proportion of its affluence are concentrated in the Winnipeg Region. However, amid this apparent abundance is a corresponding concentration of health and social welfare problems sustained by the urban environment. As a result, more than half of H. & S.D.'s clientele is concentrated in the Winnipeg Region. This concentration, plus the special service needs associated with Winnipeg as an urban area have necessitated the development of a service delivery system distinct from those systems operating in other administrative regions.

Second, the location of service facilities at points central to the population in need of services is important because of the high incidence of walk-in trade in the Winnipeg Region. In rural and northern

areas, most client contacts are completed in the field, usually at the client's residence. The initial application for services and the evaluation of service needs are completed at this time. However, because of its relatively compact setting and because of various urban transportation factors, the predominant form of client contact in the Winnipeg Region is at the office site. Clients initiate contact in most cases by approaching an office and requesting services. Once the initial application for services has been completed at the office, service needs are evaluated by means of a field worker's visit to the client's residence. If health or counselling services are required, professional staff and clients arrange to meet at the office or at the client's residence.

Therefore, service delivery in the Winnipeg Region is a two-way link involving travel by field staff and clients between service facilities and clients' residences. It is important for service facilities to be both identifiable and accessible to the population in need of services in order to facilitate trips by prospective clients to an office to initiate contact. Similarly, it is important for service facilities to be located at points central to the population in need of services in order to facilitate trips by field staff to clients' residences.

The objective function implied by the spatial

interaction of field staff and clients in the Winnipeg Region involves maximizing the accessibility of service facilities to the population in need of services. This function falls into the broad class of techniques called the location-allocation problem. Holmes and Webster (1973:7), with reference to Scott (1970:95), define location-allocation problems as follows:

"Location-allocation problems involve the simultaneous determination of locations for central facilities and the allocation of demand points to the central facilities such that the costs of flows between demand points and facilities is minimised. Scott (1970 p. 95) states the problem succinctly: '...suppose that there are given (a) a set of n demand points distributed in the plane (b) a numerical weight to be attached to each point and (c) a set of m indivisible centroids without predetermined locations; then, the location-allocation problem, in its most general form, is to find locations for the m centroids and an allocation of each point, or fraction of a point, to some centroid so as to optimise an objective function'."

Accessibility can be maximized by allocating demand locations to the nearest facility or by locating facilities at points which minimize aggregate distances to demand locations. The latter is applied in this research. In each case, solutions are a function of distance and population.

The second part of the functional relationship is concerned with supplying the level of services required to fulfill the service needs of the demand population in each service area. It is a part of the larger objective to maximize accessibility. Need is a relative concept

and, as such, is difficult to measure. It is comprised of an applied demand, plus an uncontacted residual. Services are rarely, if ever, extended to the level of need due to numerous eligibility, production and distribution constraints. Harvey (1972:92) explains need as follows:

"Needs are not constant for they are categories of human consciousness and as society is transformed so the consciousness of need is transformed. The problem is to define exactly what it is that need is relative to and to obtain an understanding of how needs arise.

Needs can be defined with respect to a number of different categories of activity... Within each of these categories we can set about defining those minimum quantities and qualities which we would equate with needs. This minimum will vary according to the social norms accepted at a given time. There will also be a variety of ways of fulfilling such needs."

In an article on "Social Justice and Spatial Systems", Harvey (1972:90-96) suggests that the main components of territorial social justice are need, contribution to the common good and merit. He considers need to be the most significant component to the development of a just distribution of public services. Harvey discusses four approaches to measure need. These are market demand, latent demand measured via relative deprivation, potential demand based on inherent factors and consultation with experts.

The third approach, potential demand, is a surrogate of need. Harvey believes that potential demand, along with consultation with experts, is the most indicative measure of need. It is calculated by applying the

eligibility criteria for supplying a service to the associated demand characteristics of the regional population. Using an example of the need for health care, Harvey (1972:93) comments on potential demand:

"Population totals obviously provide an initial indicator of potential need. But the characteristics of that population are also important. Health problems can be related to age, life-cycle, amount of migration, and so on. In addition there are special problems which may relate to occupational characteristics (such as mining), to sociological and cultural circumstances, as well as to income levels. Health problems can also be related to local environmental conditions (density of population, local ecological conditions, air and water quality, and so on). If we knew enough about all of these relationships we should be able to predict the volume and incidence of health care problems across a set of territories, from demographic and environmental information. This requires a far more sophisticated understanding of relationships than we currently have, but various attempts have been made to carry through this method. The attraction of it, of course, is that it does provide a reasonably objective method for measuring potential demand for health care. Unfortunately, we are still left with the problem of converting this potential demand into a measure of need. A measure of need in this case requires that we determine what are needed as opposed to non-essential responses to these statistically determined potential demands."

It remains, then, to determine whether or not W.R.O.S. is fulfilling the Department's service delivery objective. If the set of facilities is effectively maximizing the accessibility of services to the demand population and is meeting that population's service needs, no relocation of facilities or subsequent re-alignment of service areas may be required. However, if the effectiveness with

which this goal is being fulfilled is unacceptable, other alternatives for spatial planning in the Winnipeg Region should be considered. Whichever conclusion is reached, this is only intended as a preliminary enquiry from which more intensive spatial analysis and large-scale evaluation and planning can emanate.

Methodology

The research only concerns the development of W.R.O.S. during the last five years. This period encompasses the development of W.R.O.S. from its introduction as a new concept of service delivery in 1970 to current proposals for alternative administration in the Winnipeg Region. The data and background information for this period were collected from various media, including: interviews with H. & S.D. officials; Departmental and Statistics Canada computer print-outs; H. & S.D. statistical bulletins, reports, correspondence and administrative files; and local newspapers.

The research is comprised of five chapters. In Chapter 1, the topic is introduced and the objective and methodology are outlined.

In Chapter 2, the geographical background and development of W.R.O.S. over the past five years are summarized. First, H. & S.D.'s departmental structure, services, external relations and regional administration are presented. Then, the spatial and operational

components of W.R.O.S. and the spatial implications of service delivery are specified. The chapter concludes with a discussion of the past and current development of W.R.O.S.'s spatial goals and a definitive statement of these goals.

In Chapter 3, there is an attempt to measure W.R.O.S.'s spatial effectiveness by evaluating the system's fulfillment of the spatial goals defined in Chapter 2. First, the method and its data requirements are stated. The method is referred to as the Index of Effectiveness (E-index). The E-index is based on a distance-minimization technique proposed by Massam (1972:4-6) and on a potential demand measure recommended by Harvey (1972:93). These measures are incorporated together to evaluate the accessibility of the set of facility locations to the population in need of services. This index is applied to W.R.O.S. to calculate the effectiveness of present Income Security facility locations and to formulate evaluation conclusions.

In Chapter 4, some of the limitations of the evaluation are examined. The analytical problems and deficiencies associated with this form of analysis, plus some of the practical shortcomings of the data set and the application of the E-index technique to this particular system are investigated.

In Chapter 5, a summary and explanation of research findings and suggestions for future geographical and government research are given.

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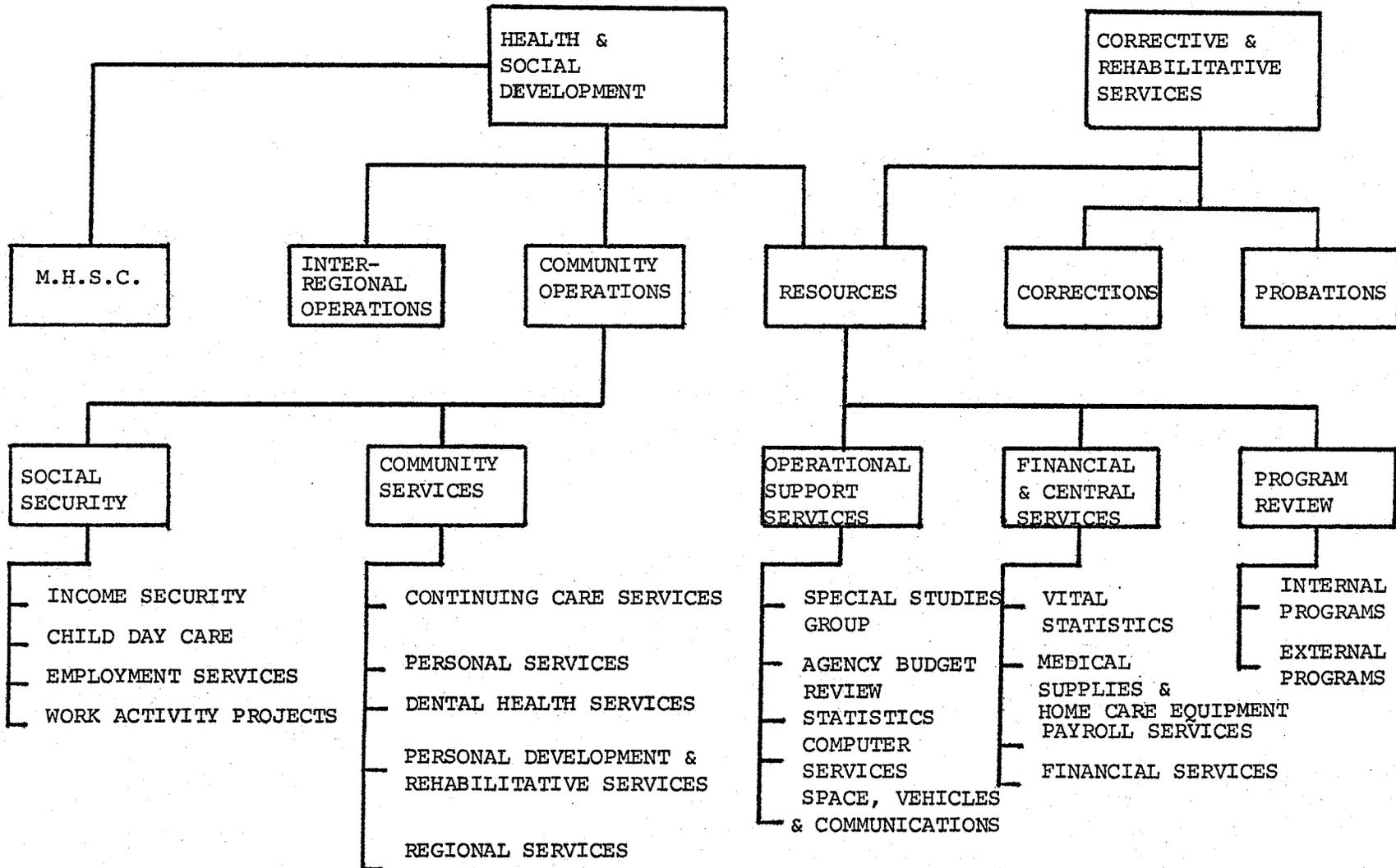
CHAPTER 2 BACKGROUND

The Manitoba Department of Health and Social Development

The Manitoba Department of Health and Social Development (H. & S.D.) is one of twenty ministries and departments in the Provincial Government of Manitoba. It operates by legislative authority through thirty-three statutes and twenty boards, commissions and committees. The Department is organized in three divisions, identified in Diagram #1 as Resources, Community Operations and Inter-Regional Operations. Corrective and Rehabilitative Services is a separate ministry attached to H. & S.D. The divisions deliver programs and services through regional offices, health units, mental health centres, correctional institutions, laboratories and related facilities. Services to the public include health care, social assistance, rehabilitation, corrections, social counselling and health and social services education. The work is carried out by a Departmental staff of close to 5,000 at a projected cost of \$308,559,400 (Krueger, 1975:1). These figures represent 44% of the 12,000 Provincial civil servants and 30% of the 1975/76 spending estimates of \$1,009,257,300.

The primary goal of H. & S.D. is to promote and maintain the health, social and economic fulfillment of the individual. In order to meet this goal, the Department co-operates on a cost-sharing, program and

DIAGRAM #1 - THE MANITOBA DEPARTMENT OF HEALTH AND SOCIAL DEVELOPMENT
 ORGANIZATIONAL STRUCTURE - MAY, 1975



planning basis with the Federal Government, city and metropolitan governments, rural municipalities, local government districts and private social welfare agencies. Health and Welfare Canada is the corresponding department at the federal level. Health and Welfare is accountable for the development and administration of universal social welfare and health programs, like Family Allowances and Unemployment Insurance. It also serves in a consultative capacity to the Provinces and administers grants to provincial bodies through special programs, like the Canada Assistance Plan. In addition, Health and Welfare is responsible for the National Welfare Council which is an advisory committee set up to help co-ordinate the activities of various levels of government and private agencies.

In Manitoba, H. & S.D. shares the responsibility for health and social services with local governments and private agencies. These provincial bodies carry out programs at the community and neighbourhood levels. The programs are highly sensitive to local needs and are often more specialized than Provincial services. In most cases, H. & S.D. attempts to co-ordinate its services with local services. For example, the City of Winnipeg Public Welfare Department has jurisdiction for the first ninety days of social assistance cases and is reimbursed by the Province at 50% of the assistance payments. After ninety days, cases are transferred to H. & S.D.'s Social Allowances