

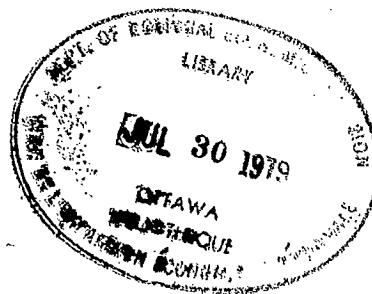
HEALTH AND WELFARE INDICATORS:
CURRENT CANADIAN RESEARCH

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Douglas G. Harland
Social & Human Analysis Branch
Department of Regional Economic Expansion

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HEALTH & WELFARE INDICATORS: CURRENT CANADIAN RESEARCH

Introduction

Research and development of statistical indicators of health and welfare are now being pursued in Canada under a new nomenclature. Terms such as social indicators, social reporting and social accounting, are some of the key catchwords. Previous emphasis on the concept of economic welfare is being supplanted by a growing concern for general quality of life. The following brief overview of current Canadian activity in the field of social indicators will undoubtedly contain many omissions. Where this happens it is not by design but, rather, due to a lack of information. Indeed, the difficulty of constantly keeping abreast of events, projects and literature dealing with social indicators, poignantly underlines the absence of a central "information clearing house" in this field.

Health and welfare indicators are giving way to social indicators for several reasons. The traditional concept of health has been evolving over the last thirty years from a narrow physiological dysfunctional definition to a broader interpretation of "positive health". In the words of the World Health Organization: "Health is a state of complete physical, mental and social well-being and not merely the absence of disease and illness." General welfare in the past has always been closely associated with economic welfare. For example, poverty -- a condition of low general welfare -- has been defined historically as low-income and measured in purely economic terms. The concept of quality of life is considerably more comprehensive:

Quality of life certainly includes access to consumer goods and services. But it means much more. It denotes the state of our physical, mental and emotional health; civil rights and legal justice; the performance of our education system (for students of all ages); the air, water, land and noise pollution of our total environment. Quality of life, I suggest, includes the psychological and sociological dimensions of adequate housing; the enjoyment of cultural, recreational and leisure-time activities; satisfying interpersonal relationships and healthy family functioning; the knowledge and resources to adapt to our changing times, and an equal opportunity to influence the direction and speed of the changes. (1)

Social indicators are generally described in the literature as measures of "levels of living" or "quality of life". Their important characteristics are (1) they are quantifications of social phenomena, (2) they are capable of being time series data, and (3) they are of

direct normative interest and interpretation. Upon reviewing the literature it became clear that social indicators are being conceptualized within a variety of frameworks. The overview which follows includes events, projects and literature dealing with any one of the following four concepts:

- (1) Time-series social measurements of the state of personal happiness (what the Economic Council of Canada calls happiness indices).
- (2) Time-series social measurements of the degree of perceived well-being in terms of personal goal-attainments of basic social and human needs and wants (what I call quality of life indicators).
- (3) Time-series social measurements of socio-economic conditions and living experiences, as produced from a socio-economic model (so-called "objective" measures of selected socio-economic phenomena and sometimes called indicators of social development).
- (4) Time-series measurements of the extent to which governments succeed in achieving politically defined and pursued goals and objectives (what is generally referred to as goal indicators).

It is important to recognize the distinction between each of these four fields of inquiry. This is not to say that one should focus upon only one conceptual framework within a research program. There may well be good reason to include several or all orientations. Although each conceptual framework entails a particular subset of concepts and its own methodologies, all may someday be incorporated within a general systems, theoretical model.

Personal happiness will be determined, in part, by the degree of personal goal-attainment. Perceived well-being, in turn, will be predicated upon relevant socio-economic conditions and living experiences. Government social policy and its attendant program goals and objectives overlap the other three domains insofar as political interventions (e.g., rural social adjustment programs) influence, directly or indirectly, personal happiness and/or socio-economic living conditions.

From a planning perspective, it may be desirable to approach the subject of social indicators from all four frameworks, simultaneously. This course of action might help mitigate conceptual confusion between quality of life as perceived by the citizenry, where differing sub-cultures and value systems prevail, and quality of life as inferred from official government social policy. In any case, one should pause awhile and consider the alternative conceptual approaches before moving on to other aspects. Theorizing, model-building and methodological issues will be seen in a clearer light if the conceptual underpinnings of a social indicators research program are made explicit.

The Concept of Happiness. Happiness is a psychological variable, which may be of limited interest to the process of social planning. When one measures an individual's happiness, one is measuring an affective personality characteristic of uncertain duration and unknown etiology. The concept of happiness is peripheral to the concept of quality of life -- that is, in the short run -- precisely because a given state of the affective personality characteristic called "happiness" can be highly transient, fluctuating from day to day. To understand why someone is experiencing a given state of happiness, it is necessary to go beyond the operational definition of "happiness". We can measure the state without examining its etiology. Hence, mere measurement of happiness can be accomplished without recourse to analysing or understanding the causes of happiness.

Psychologist, sociologist and economist have all had their turn in developing theories of human happiness. Industrial psychologists have successfully applied the concept of happiness to the world of work to increase workers' productivity. Sociologists have evolved theories of human behaviour based upon systems of sanctions and rewards, in their attempt at social engineering and understanding human motivations and group dynamics. Economists have a long historical interest in this subject, stretching back to the utilitarian theory of value of early economists, and including a large literature dealing with welfare economics.

If one wishes to develop social indicators of human happiness (I prefer the expression "happiness indices" used by the Economic Council of Canada, and others), then it will be desirable to evolve a pragmatic and realistic theory of happiness which can be operationally defined for subsequent quantification, but which also can be related to the phenomenological world. Such a theory might attempt to relate changes external to the individual -- stimuli -- such as socio-economic changes brought about by government interventions, to changes in the degree of happiness as perceived and assessed by each individual.

The Concept of Quality of Life. Measurement of quality of life based upon personal perceptions of essential social and human needs, will not provide all the information required for social planning and program evaluation. If the concept is to be manageable, it must be limited. An operational definition of quality of life cannot embrace all social phenomena. Many needs and wants will be excluded, on pragmatic grounds, from being characterized as basic and essential. This process of selectivity further underlines the distinction between measures of perceived quality of life and measures of political goal-attainment. Due to differences between perceived essential needs and social program goals, we are left with the conceptual potential of government successfully achieving some of its social objectives without changing the citizenry quality of life.

The concept of quality of life differs from the concept of happiness. While the key quality of life variables do change over time, nevertheless we are on fairly safe ground to expect that goals which are derived from basic and essential social and human needs and wants, tend to be substantially stable in the short run. It is sufficient to monitor a nation's quality of life on an annual basis. A further distinction between the two concepts concerns their content specification. Formulation and articulation of the content of "quality of life" is a definitional prerequisite to developing indicators. One presents social indicators of quality of life, in terms of goal-attainment of specific needs and wants.

There is at present no comprehensive theory of quality of life. This is due partly to the fact that the concept, in its present-day popular form, is rather new. A theory of quality of life is a functional prerequisite to the concept of social reporting. If social indicators are defined as isolated measures of discrete aspects of essential needs and wants, then we can define social reporting as the process of classifying, ordering and aggregating social indicators to facilitate concise, comprehensive and balanced judgements about social well-being and national prosperity. There are additional profound theoretical problems associated with social reporting which are not encountered in the design of discrete goal-attainment measurement scales.

Social indicators describe elements of quality of life. Without an appropriate theory, we shall not be in a position to assemble these partial measures into a coherent overview. Of course, it is sufficient in some instances to measure only some aspects of general well-being. Government administrators who have program mandates in specific areas of social policy (e.g., health care, manpower training, education, etc.) may have neither the authority nor inclination to concern themselves with measuring either overall quality of life, or those citizenry perceived goals which lie outside their actual or apparent jurisprudence.

However, when it is deemed desirable to develop a theory and a subsequent operational model so that we can see "the entire picture" a fundamental choice between two approaches is required. The path of least resistance is to predict general quality of life from an incomplete assortment of social indicators which might have been designed and collected in isolation of one from another. Here, direct measurement of discrete goal-attainment becomes indirect measurement of general quality of life. But in following this road, arbitrary value judgements are made to establish assumptions about the association between general quality of life and individual social indicators. While such a theoretical approach may be pursued because: (1) someone has decreed it is necessary, (2) it seems to work in practice, or (3) it is only a heuristic assumption; nevertheless, the end results may be seriously challenged on scientific grounds. The alternative methodology involves working from the beginning with the concept of general quality of life. Any attempt to directly measure

general quality of life, will have to be based upon the denotation of this construct. It will be necessary to articulate the defining properties (designation) of quality of life before we can delineate its denotation, and construct a mathematical model for operationalizing the theoretical framework.

The Concept of Socio-Economic Models. Perhaps the concept which presents the most difficult problems is that of "socio-economic conditions". What is the meaning of this concept? Is it allied to the concept of perceived well-being (quality of life), or is it allied to the field of social policy? Its status seems to lie somewhere in the middle. On one hand, model-builders minimize its dependency on the normative order and thus by-pass the thorny issue of different value systems, and on the other hand they minimize its exclusive dependency on existing government policy in an attempt to escape from a charge of ideological political bias.

The crux of the problem with many socio-economic models, is to scientifically justify the inclusion or exclusion of any particular variable. That is, which criteria should be employed in constructing the model. If one of the criteria isn't empirically substantiated citizenry values, attitudes, aspirations and goals, then output from the model cannot be directly related to either human happiness or quality of life. Similarly, if the criteria chosen to construct a socio-economic model excludes the fullest consideration of existing political goals and objectives, then the model is of limited use in evaluating current progress in government achieving its social policy.

In other words, if the concept of socio-economic living conditions differs from the concepts of happiness, quality of life or social program goal-attainments, then such a concept will be of "second-best" value in measuring happiness, well-being or government social policy.

Social scientists have advanced a number of theories of human behaviour and social dynamics which may be relevant to measuring socio-economic conditions, such as theories of social change, general systems theories and theories of social action. In the present context of social indicators, what we are looking for is a general socio-economic theory which can be operationalized to monitor changing living conditions and institutional structural changes. Theorists working in this field would ultimately like to evolve a theory of socio-economic change which would establish cause-effect relationships. Naturally, such a theory would be of considerable utility for social planning and program evaluation.

Generally speaking, this type of theoretical research to date tends to establish a set of assumptions and axioms independent of citizenry perceived attitudes, values, aspirations and goals. In some cases, the theory is built around selected social phenomena which correspond to major political social concerns. Socio-economic models of "quality of life" may attempt to substitute the concepts of general

systems theory, functionalism, and threshold limits (ecology and population theory), for that of perceived well-being. This is not to suggest that theoretical work in general socio-economic models has no utilitarian value or that it is redundant and second-best to theoretical work based upon the concepts of happiness, well-being or program evaluation. Rather, the purpose of this discussion is to indicate the potential theoretical confusion which can ensue from an ill-defined conceptual research design.

General socio-economic model-building holds out the promise of serving as a bridge between the theory and measurement of happiness and well-being on one side, and the theory of social policy and program goals on the other side. This type of theorizing may one day provide the statistical, probabilistic assumptions required to link and evaluate government interventions with citizenry perceived quality of life. Only then can we truly begin to establish a system of social policy accounting wherein the impact of simulated changes (deletions, modifications, or additions) in social policy programs, priorities and target objectives, are measured in terms of benefit-cost using welfare utility units of measurement.

The Concept of Program Goal-Attainment. Governments are elected to formulate official social policy. Social policy and its attendant plans, programs, goals and objectives are part of the political process. We have witnessed an increasing involvement by the federal and provincial governments, during the last ten years, in the fields of social development and human resource development. As the commitment grew, the need for an evaluation of the social ramifications of these programs has become increasingly necessary. A major difficulty of planning, monitoring and evaluating these programs is the difficulty of assessing their progress in social terms:

Conceptualizations of development of specific program objectives are usually stated in broad, general and abstract and often intangible or inconsistent terms, e.g., optimizing natural or human resources, maximizing individual satisfaction, increasing man's identification to his environments, etc. When these goals are conceptualized in terms of more concrete goals and objectives, more often than not, they are formulated objectives that are primarily economic in nature, e.g. per capita real income, employment, decreased imbalances, GNP, etc. (2)

A conceptual confusion arises when many social programs become viewed as economic for evaluating purposes. While the original intent of a program might be that of a catalyst in helping achieve explicit economic ends (e.g., social adjustment programs designed to assist indigenous Canadians in accessing local job markets and employment opportunities), nevertheless it is important to attempt to evaluate the program's impact in non-economic terms.

Today most measurement in program evaluation is done with economic indicators. Substantial theoretical work lies ahead if we are ever to have an intelligible and coherent framework in which to analyse, monitor and evaluate overall government social policy. The problems to be overcome are not merely the historical result of one-sided emphasis on monetary measurement, to the detriment of the non-monetary measurement of government output. Nor can these problems be dismissed as difficulties inherent in a political system where social policy is continuously evolving and program priorities are periodically changing. However, many of the theoretical obstacles are intimately associated with the political process itself.

The constitutional division of powers between the various levels of government and the division of functional responsibility within government, are two factors which inhibit the development of a national theoretical framework for analysing and operationalizing "quality of life" from the perspective of government. Program priorities between federal, provincial and local governments sometimes collide. Aspects of one department's mandate may be dysfunctional to another department. Social policy enunciated at cabinet level may be somewhat less embellished by the time it has been filtered through the pragmatic constraints of economic, natural and human resources, and has been translated into actual program objectives. Also, one must not fail to take into account the possible presence of partially conflicting ideologies with a confederation of sub-national governments. Just as individuals may have different perceptions of "the good life", so too may provincial and local governments disagree on the role and the power of government interventions in helping achieve "the great society" -- however that may be officially defined.

The point to be recognized and underlined is that an enumeration of goals and objectives embodied in government policy and programs must never be considered to be definitionally synonymous with an operational definition of the concept of perceived well-being (quality of life). We are dealing here with two different concepts and, therefore, two different sets of indicators. Governments do not really define perceived quality of life, although they do attempt to influence increases in perceived personal goal-attainment. Governments only define their goals and objectives according to their powers of jurisprudence, their ideology and what they perceive to be economic, cultural, technological and political constraints. This distinction between government and citizenry division of responsibilities and prerogative does not cast any negative implications on the role of government in a democratic society. The business of government is one of governing. It is one of decision-making, of managing and directing the political affairs of a country, all of which includes setting national political goals and objectives.

Recent Canadian Events

The Canadian Council on Social Development sponsored this country's first national seminar on social indicators in Ottawa January 13-14, 1972. Mrs. Novia A.M. Carter was Seminar Co-ordinator and Michael Wheeler served as chairman. Dorothy Walters and Gail Stewart addressed the seminar on the subject of social intelligence and social policy. Additional presentations were made by Gilles Beausoleil, K. Scott Wood (Social Indicators and Social Reporting in the Canadian North), Norman Pearson (livability indicators), John Page and Mario Carvalho (habability in the Boreal Zone of Canada), Earle Snider (the need for social indicators: the Alberta case), and Hans Adler (the development of social indicators at Statistics Canada).

Proceedings of the seminar have been published by The Canadian Council of Social Development (55 Parkdale Avenue, Ottawa, 182 pages). The following quotation is from Social Indicators: Proceedings of a Seminar:

The purpose of the seminar was to bring together individual scholars and representatives of non-government and government bodies for open discussion of problems encountered by groups working in this field in Canada. It was hoped that responsible organizations would be encouraged to develop verbal commitments into practical work in line with their aims and resources. (3)

A workshop on issues related to the development of social indicators in Canada was sponsored by the Statistics Committee of the Social Science Research Council of Canada, at McGill University June 2, 1972. The workshop, Social Indicators for Canada: Where are We Headed?" was organized and chaired by Dr. Marvic McInnis, Associate Professor of Economics and Queen's University. He was assisted by Mr. Richard Kouri, a staff member of the Social Science Research Council who has been monitoring Canadian activities on behalf of the SSRC. Invited discussants to the workshop included Douglas Auld (University of Guelph), Barbara Haskel (McGill University), and Jacques Larin (Université de Montréal).

Several background papers were distributed prior to the workshop. Hans Adler contributed a paper on the activities of his department, "A Progress Report on the Development of Social Indicators and Related Data at Statistics Canada". The Chairman, Marvin McInnis also prepared a useful "Organizers' Introduction" statement. Further information may be obtained from the Social Science Research Council of Canada (151 Slater Street, Ottawa 4).

A special symposium was held at the 1972 Annual Conference of the Association of Canadian Schools of Business, McGill University, June 6, 1972. The symposium, "Measures and Determinants of Quality of Life in Canadian Society," was addressed by staff members of York University's project on measuring workers' perceived quality of life. R.J. Burke, J.G. Goodale, D.T. Hall and R.C. Joyner presented a paper on their work at York University, "Defining and Measuring Perceived Quality of Life."

Continuing its leadership role in stimulating Canadian social indicators research, the Canadian Council for Social Development has included this workshop, "Health and Welfare Indicators," within the program of this year's Canadian Conference on Social Welfare (sponsored by the Canadian Council on Social Development, Laval University, Quebec 18-22 June 1972). Organizer for these series of three workshops in Social Inquiry and Social Services, is Mrs. Novia Carter, Program Director, Social Policy Unit, CCSD. Today we will hear from Dr. Noel Manceau, Quebec Department of Social Affairs, on the subject of health indicators, and from Professor Jacques Larin, Associate Professor, School of Social Work, University of Montreal, on the topic of welfare indicators.

The Social Statistics Section meeting of the American Statistical Association will be held in Montreal, August 14-17. Several papers in the field of social indicators will be presented:

J.W. Bush, M.M. Chen and Donald L. Patrick, "Social Indicators for Health Based on Function Status and Prognosis." Health Index Project, Department of Community Medicine, University of California.

Harold F. Goldsmith and Elizabeth L. Unger, "Social Areas: Identification Procedures using 1970 Census Data." National Institute of Mental Health.

Harvey A. Garn and Michael J. Flax, "Indicators and Statistics: Issues in the Generation and the Use of Indicators." The Urban Institute, Washington, D.C.

Herbert Bixhorn and Albert Mindlin, "Composite Social Indicators for Small Areas." Executive Office, Government of the District of Columbia.

Projects: Individual and Organizational Efforts

C.M. Ballard, a graduate student at Carleton University, has been examining different approaches for measuring the quality of life of residents in Vanier City, Ontario. In an unpublished paper entitled "Social Indicator Systems" he develops an original framework for analysing quality of life, based upon the Maslow hierarchy of

needs:

It will be noted in the following pages that a set of alternatives is offered at each level of procedure in the system. One set of indicators will deal with the Maslowian hierarchy, the other with other areas of concern. They are inter-related to a degree, but can be looked at separately if desired. This paper is only an outline of the indicators and procedures that could be used, (and alternatives at each level) and are intended to (1) stimulate future work in the areas of interest and concern, and (2) give alternatives to Vanier if they feel that the psychological overtones of Maslow are not to be used at this time. (4)

At the University of Guelph, Professor Alex C. Michalos has began writing a major two-volume work: Quality of Life, An Investigation of the Foundations of a Comparative Social Report for Canada and the United States. This is a five-year project, but he has already produced a very comprehensive summary of the material to be covered. In his "Third Working Outline - October 1972" he writes:

It should perhaps be mentioned that sometimes the conceptualization of problems precedes the collection of data and vice-versa. I have included information that seemed relevant to the investigation whether or not I have a neat pigeon hole for it, and I have suggested hypotheses, definitions, questions and partial taxonomies of issues whether or not I have been able to justify them. In short, as its title page says, this is still a working outline rather than a final one. The estimated time for completion of the whole project (i.e., a first complete draft of the two volume book ms c. 1200 p.) is about five years from this writing. Any suggestions, comments, criticisms, etc. will be greatly appreciated. (5)

Development of social indicators is also proceeding at P.S. Ross & Partners, a private management consultant firm. Michael Alexander and Gerald Ross have been working on alternative accounting frameworks for monitoring social benefits and costs resulting from major corporate decisions. The attached selected bibliography contains several references to their pioneering work.

We now have two publications dealing with political goal indicators. One focuses upon national goals and the other upon local government goals. Both are mandatory reading for the serious student of social indicators. The Economic Council of Canada's Eighth Annual Review discusses the need for, and problems encountered in developing, statistical measures of the impact of socio-economic programs. A staff study from the Canadian Federation of Mayors and Municipalities, prepared by

Raymond J. Protti, On Improving Local Government Decision-Making, continues the groundwork laid by the Economic Council of Canada:

This paper is intended to provide an overview of some of the things that can be done to improve decision-making at the local level. As such, it should be regarded as a background paper to encourage and aid local government in its pursuit of an improved way of dealing with the issues of community development. ... Part One provides background material on the major trends at the local level of government which suggest the need for an "improved way of looking at things," Chart One highlights these three major trends: fiscal imbalance, changing value systems and the changing nature of government issues. ... Changing value systems in society will pressure governments to change their traditional ways of evaluating the worth of programmes. Increasingly, attention will have to be paid to and measures developed of the social and environmental value of policies and programmes. (6)

Much interest has been expressed within the Canadian Government in the topic of social indicators. Notwithstanding the rhetoric, very little work is actually underway. There is an inter-departmental working party on social indicators which meets periodically to offer suggestions to Statistics Canada concerning their planned Compendium of Social Statistics. This working party is not itself engaged in the research and development of social indicators.

Under the leadership of Hans Adler, Senior Advisor on Integration at Statistics Canada, this agency is preparing a report on significant social trends much along the lines developed by the Central Statistics Office (United Kingdom) in Social Trends. At this stage, most effort is being channeled into the identification, collection and compilation of available "interesting" social statistics. Concomitantly, the office of the Assistant Chief Statistician - Socio-economics Statistics, and in particular Mr. Paul Reed, is now devoting considerable attention to evolving an official Bureau policy in this whole field.

The Economic Council of Canada has recently established a task force on social indicators under the direction of Dr. David Henderson. Four areas have been selected for intensive research: urban affairs, education, health, and cultural and linguistic policy.

The Social and Human Analysis Branch, Department of Regional Economic Expansion initiated an exploratory study to assess the utility, desirability and feasibility of developing regional social indicators for planning and evaluating social and human aspects of Departmental programs. The project is continuing under the general direction of Douglas G. Harland. Work began on the first phase in the fall of 1970. A comprehensive study of the literature was undertaken; and a collection of several hundred essays, articles, research

proposals and reports have been compiled into thirty loose-leaf manuals of readings. University students were employed during the summer of 1971 to continue reviewing the literature. They developed a listing of statistics which had been recommended as proxy social indicators. This inventory was partially matched against existing social data.

The project is now in its second phase. An extensive, computerized data bank of significant time-series social statistics at the provincial and regional level, has been constructed by university students during the past five months. Twelve areas of social concern are represented: communications; culture, recreation and leisure-time activities; demographic and vital statistics, economic statistics; education and vocational training; employment; environment; health; housing; legal justice and public safety; social security and social welfare; transportation and travel. Final editing and "cleaning" of the databank file should be completed by the end of December.

Report writing constitutes the third phase. Several initial reports and memoranda have already been produced for restricted distribution. A bibliography and an accompanying index were completed last November. Further volumes are being prepared as unofficial Working Papers under the general title of Social Indicators: A Framework for Defining, Measuring and Forecasting Quality of Life. These papers will follow a standardized outline:

Introduction (10 pages); Concepts, Definitions and Nomenclature (10 pages); Models and Measurement Methodologies (10 pages); Statistical Tables selected from the databank (20 pages); Future Research and Development (10 pages) and a Bibliography and Index (20 pages). A monograph has been prepared, in manuscript form, giving a general overview of social indicators and its allied fields of social reporting and social policy accounting. It is anticipated that the report writing phase will be concluded by the end of next March.

The province of Alberta has been the only government in Canada to attempt to produce a social report. Under the auspices of the Human Resources Research Council (HRRC), a preliminary "social audit" was published earlier this year:

This report to the people of Alberta is one of several outcomes of an exploratory project in social accounting in Alberta. The project had a number of purposes: (1) to begin the development of a comprehensive conceptual system for social accounting; (2) to compile an inventory of useful available data; (3) to assess the prospects for the development of social accounting in the future; (4) to prepare a preliminary social audit for the information of the people of Alberta. (7)

Canada's first social report (albeit a provincial report) was prepared by L.W. Downey, Director of HRRC. It is included in the attached bibliography along with other relevant reports by J.A. Riffel and E.L. Snider.

In Ontario some progress is also underway. The Commission on Post-Secondary Education in Ontario has inaugurated its own research program which they call A Feasibility Study for the Production of a Social Report for the Province of Ontario. The COPSEO study is co-directed by David Black and Jack Kirkaldy. A number of studies were contracted out to various individuals and organizations:

In the early stages of its deliberations the Research Committee of COPSEO concluded that their studies of educational economics (cost-benefit analyses) should be juxtaposed to the analogue of a social report for education. They constructed their analysis via the division of educational functions and activities between so-called "hard" and "soft" slates, the former to be associated with economic indicators and the latter with social indicators. In attempting to refocus and redirect the work to date on the "soft" slate we have concluded that post-secondary education cannot be adequately or effectively analysed in isolation from other social welfare programs of the Province. (8)

Additional information of the activities of COPSEO and the availability of their reports may be obtained from the Commission's Toronto office (Suite 203, 505 University Ave., Toronto).

Other research activities in social indicators are described in some detail in the Canadian Council on Social Development publication, Social Indicators: Proceedings of a Seminar. These include the work by K. Scott Wood for the Department of Indian Affairs and Northern Development (Social Indicators and Social Reporting in the Canadian North); Norman Pearson (urban indicators for measuring quality of life in Vancouver); and John Page and Mario Carvalho (habitability indicators for measuring quality of life in the boreal zone of Canada).

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