
USE OF MAPS FOR SOCIO-ECONOMIC STUDIES WITH REFERENCE TO MALAYSIA

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ABSTRACT

Maps are intellectual devices that are essential for reference and research. They are indispensable for showing spatial data and non-verbal information. This paper discusses the role of maps in socio-economic studies and research with reference to selected Malaysian examples. These examples include research on settlements based on topographic maps, the use of cadastral maps for studies relating to land parcels, and maps as illustrative devices. The prospects and possibilities of maps for research arising from advancement towards the digital format are also examined.

INTRODUCTION

Maps include all cartographic documents drawn to scale to represent specific areas on the earth's surface. The word "map" is commonly used in a generic and specific sense. In the former, it refers to maps, charts, plans or sections and, in the latter, to maps only (Visvalingam, 1989). A "chart" generally refers to a graphic document to aid air or sea navigation or to describe weather patterns, whereas a "plan" is a large-scale drawing of towns, transport or street patterns and may also be a portrayal of the interior layout of houses (Vasiliev *et al.*, 1990).

These documents are different modes of graphic communication based on fundamental principles of cartography, and are intellectual devices by which complex physical and human phenomena on the earth's surface are reduced and portrayed in meaningful patterns and

interpretable images. It is thus possible to derive spatial information from the patterns, distributions, and characteristics of an infinite variety of features and their relationships with the human occupants in the mapped surfaces.

While human beings are able to communicate through words and are generally able to recall what is communicated, they have a limited capacity for unprocessed information as embodied in numbers, directions, locations or distributions. When the information is represented in the form of a graph or map, the human brain is able to process the information more easily than the verbal form (Philips, 1989).

As the ideal graphic tool that offers an overall spatial perspective of particular places or localities, the relevance of maps as an aid in socio-economic studies, economic planning and development is acknowledged (Taylor, 1985). Conventional as well as environmental cartography, for example, is used increasingly in planning and in monitoring change. The fundamental importance of maps in area studies is also obvious. As maps are representations of the real world and may thus be employed as conceptual models in order to better understand this world, their importance in research on topics with a spatial bias is undoubted (Board, 1967). This paper discusses the map both as a source of information and an analytical device in socio-economic studies and research with examples based on Malaysian topics. Investigations of the physical environment for which maps are even more crucial fall outside the scope of this paper.

MAPS AND SOCIO-ECONOMIC STUDIES: SOME EXAMPLES

Among the major types of maps that are useful sources of reference in socio-economic studies in Malaysia include topographic and thematic maps that show economic, social, cultural, political and related phenomena, the general tourist and town maps, town and electoral plans as well as cadastral sheet lithographs.

Topographic and other general-purpose maps are produced by the Malaysian Survey Office. This agency is the custodian of the national geographical database and vested with the task of publishing and disseminating spatial data in suitable cartographic forms (see Voon and Munisah, 1992). Various other government departments also produce agricultural, forestry and medical maps as an essential component of their normal activities.

Topographic maps are large-scale representations of selected areas showing an array of physical and man-made features as faithfully as possible within the limitations imposed by the scale. In Peninsular Malaysia, the one inch to the mile topographic maps comprising 136 sheets and the current series of 177 sheets on a scale of 1:50,000 contain an immense amount of topographic and cartographic information. These maps are officially classified as confidential documents with access granted only to authorized users. Similarly restricted are complementary series on 1:25,000 and larger scale maps of towns and other selected areas. Cadastral plans, on the other hand, are kept in State and District Land Offices as official documents of land parcels that have been granted by the government for private or public uses.

This section will outline the study of selected socio-economic issues to emphasize spatial relationships based on evidence from maps and other primary sources of reference. Two broad types of research are illustrated, one with reference to small-scale maps for studies and planning of a general nature at the regional level,

and the other by employing large-scale plans for detailed investigations at the local level. In either case, the map may also be used as an analytical and illustrative device.

Studies on settlements

Settlements constitute an integral element of the cultural landscape and are an expression of the functional organization and utilization of space. Their economic and social characteristics reflect the nature of occupation and general quality of life of the inhabitants. Maps of towns and villages showing their locations and distribution, population size, ethno-linguistic composition, land use, infrastructure and general social and economic attributes have practical applications for planning and research.

For planning purposes, the location and density of settlements and their topographic attributes indicate the accessibility of different settlements and may thus influence decisions in the provision and spacing of services and amenities such as roads, foot bridges, schools, clinics, wells, water and electricity supplies. The density of roads in an area indicating the ease of accessibility and circulation of goods and services is often a reliable index of development. In planning medical services and the control of tropical diseases such as malaria, knowledge of the location and distribution of remote settlements will contribute towards efficient health management in rural areas. Also, in planning and implementing the population census, settlements and individual houses have to be accurately mapped to assist in the demarcation of enumeration blocks and hence have a direct bearing on the reliability of the outcome of the exercise.

As topics for research, the patterns of rural settlements in different periods of time may reveal radical alterations in political, social or economic circumstances. Figure 1 illustrates the effects of official policies during the immediate post-Japanese Occupation period on the