

Structural Analysis of Environmental, Socio-demographic Determinants of Malnutrition in Children: A Study in Tumpat, Malaysia

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Abstract

Data from around the world show the causes underlying most nutrition problems have not changed much over the past 50 years. These causes are diverse, multi-sectoral, interrelated and entail biological, social, cultural, and economic factors. Their influences operate at various levels such as child, family, household, community and nation. If groups at risk are identified and the causes of malnutrition clearly understood, prevention becomes more feasible and cost effective. It is well established that child health outcomes are affected by factors operating both at the individual level and within the compositional and contextual situation in which the child resides. With the advancement of technology, many efforts have been undertaken in understanding the effects of geographical factors in influencing the outcome of child health especially utilizing the Remote Sensing and Geographic Information System technology. With the use of common overlaying functions and other multilevel modelling techniques it is possible to understand the multilevel models and the inter-relationship among the components, a capability which is more powerful than the traditional single-level statistical methods. By using a comprehensive analytical method such as Structural Equation Modeling (SEM), researchers can evaluate theoretical models that are measured by multiple variables or measurement instruments. It also provides depth of information that explores the direct and indirect relationships among socio-demographic, dietary intake measurement, anthropometric measurements, and geographical factors with regards to malnutrition and health outcomes. In this study we intend to develop a model for the relationship among socio-demographic, geographical factors, dietary intake measurement, anthropometric measurements, and malnutrition outcomes among children under the age of 5 residing in Tumpat, Kelantan, Malaysia, using this modelling technique. Basic determinant such as poverty and other underlying determinants such as food availability and expenditure, demographic characteristics and government assistance seemed to have had an impact on the feeding practice, dietary intake and health status of the children in Tumpat. The model generated will not only predict the malnutrition cases but also provides in-depth information for policy makers and programme implementers in planning more effective intervention programmes in eradicating malnutrition in the area studied.

Key Words: Malnutrition, Geographic Information System (GIS), Structural Equation Modelling, Malaysia