



# Spatial Modelling of Quality of Life(QOL) Indices in Geographical Research: A Conceptual Understanding

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**Abstract:-** Quantitative revolution in the field of social sciences brought remarkable change in research and development of Geography. Spatial analysis is one of the significant domains of modern geographical research. The study of spatial structure and function of various social, economic, political, ecological and cultural facts and phenomenon had been studied under the approaches of spatial analysis. Quality of Life(QoL) which evolved as the key theme in contemporary research across various discipline, spatial modelling of Quality of Life(QOL) Indices emerges as a inevitable tool. The present paper is primarily focused on giving a conceptual account on Spatial Modelling of Quality of Life(QOL) Indices in Geographical Research.

**Keywords :** Spatial Modelling, Quality of Life(QOL), Spatial Analysis, Geographical Research.

## Introduction

Geography is an interdisciplinary science dealing with physical and human facts and phenomenon of earth surface. Geographical research since 1970s shifted more towards finding the solution of applied questions. Quality of life analysis is one of them. How the quality of life can be assessed may be subject matter of various discipline of social sciences but spatial modelling is specialized field of research in geography

**Quality of Life (QOL) Indices:-** Quality of life (QOL) is defined by the World Health Organization as "an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns".<sup>1</sup> Standard indicators of the quality of life include wealth, employment, environment, physical and mental health, education, recreation and leisure

time, social belonging, religious beliefs, safety, security and freedom.<sup>2</sup> QOL has a wide range of contexts, including the fields of international development, healthcare, politics and employment. Health related QOL (HRQOL) is an evaluation of QOL and its relationship with health.

Quality of life (QoL) can be defined in many ways, making its measurement and incorporation into scientific study difficult. This is a theoretical paper regarding the definition and measuring of quality of life. The search strategy included a combination of key words 'quality of life', 'definition of QoL' as well as 'measuring QoL' in titles using Medline and Google Scholar databases.<sup>3</sup> Quality of life is a complex, multifaceted construct that requires multiple approaches from different theoretical angles. <sup>4</sup> Scientists from the various disciplines of social science are encouraged to exploit the strengths of other's contributions in a collaborative effort.<sup>5</sup> A thorough understanding of subjective well-being requires knowledge of how objective conditions influence people's evaluations of their lives. Similarly, a complete understanding of objective indicators and how to select them requires that we understand people's values, and have knowledge about how objective indicators influence people's experience of well-being.<sup>6</sup>

Quality of life (QoL) may be defined to be the general well-being of individuals, families and societies, outlining negative and positive features of life. It observes life satisfaction, including everything from physical health, family size, education, employment, wealth, safety, and security to freedom, religious beliefs and environment. Focusing the Quality of life of the people living in and around the mining areas, one can explicitly notice the worst condition of their living environment.

There are various different methods of measuring quality of life in terms of health care, wealth, and materialistic goods. However, it is much more difficult to measure meaningful expression of one's desires. One way to do so is to evaluate the scope of how individuals have fulfilled their own ideals. Quality of life can simply mean happiness, the subjective state of mind. By using that mentality, citizens of a developing country appreciate more since they are content with the basic necessities of health care, education and child protection.<sup>7</sup>

A major development was development of - The Physical Quality of Life Index (PQLI) is a measure developed by sociologist Morris David Morris in the 1970s, based on basic literacy, infant mortality, and life expectancy. Although not as complex as other measures, and now essentially replaced by the Human Development Index, the PQLI is notable for Morris's attempt to show a "less fatalistic pessimistic picture" by focusing on three areas where global quality of life was generally improving at the time, while ignoring gross national product and other possible indicators that were not improving.<sup>8</sup>

Two strategies have been used in the definition of the constituent elements, domains, aspects, components, factors, or content areas of QOL: theoretical and empirical. From a theoretical perspective, several authors have formulated models of QOL; for example, Lawton proposed a four-sector model in which psychological well-being, perceived quality of life, behavioral competence, and objective environment are hypothesized as the four general evaluative sectors: "Each of the four sectors may in turn be differentiated into as many

dimensions as the details of one's attention demand".<sup>9</sup> On similar lines, the World Health Organization (1993) has conceptualized QOL in terms of five broad domains: physical health, psychological health, level of independence, social relationship, and environment. Finally, other authors have tried to develop categories of QOL dimensions. For example, Hughes (1990)<sup>10</sup> defined seven categories-

1. Individual characteristics (functional activities, physical and mental health, dependency, etc.).
2. Physical environmental factors (facilities and amenities, comfort, security, etc.).
3. Social environmental factors (levels of social and recreational activity, family and social network, etc.).
4. Socio-economic factors (income, socio-economic status, etc.).
5. Personal autonomy factors (ability to make choices, exercise control, etc.).
6. Subjective satisfaction.
7. Personality factors (psychological well-being, morale, life satisfaction, happiness, etc.).

A second strategy used for defining QOL components is empirical. That is, since QOL refers to individual's lives, individuals must be asked to state the implicit domains of their QOL concept. For example, Flanagan (1978)<sup>11</sup> assessed QOL components through a US survey of three age group samples. Fifteen critical components were grouped into five main categories:

1. Physical and material well-being (material well-being and financial security).
2. Relations with other people (relations with spouse and having and raising children, relations with parents, siblings, or other relatives, relations with friends).
3. Social, community and civic activities (activities related to helping or encouraging other people, activities related to local and national governments).
4. Personal development and fulfilment (intellectual development, personal understanding and planning, occupational role, creativity and personal expression).
5. Recreation (socializing, passive and observational activities, active and participatory recreational activities).

The best way of approaching quality of life measurement is to measure the extent to which people's 'happiness requirements' are met - ie those requirements which are a necessary (although not sufficient) condition of anyone's happiness - those 'without which no member of the human race can be happy'.<sup>12</sup>

### **Spatial Modelling of Quality of Life (QOL) Indices in Geographical Research**

The term "spatial modelling" refers to a particular form of disaggregation, in which an area is divided into a number (often a large number) of similar units: typically grid squares or polygons. The model may be linked to a GIS for data input and display. The transition from non-spatial to spatial modelling is often considered to be pretty significant, and there are a number of modelling packages that advertise their spatial modelling capabilities: indeed, many are labelled as landscape or landuse modelling tools.<sup>13</sup> For the evaluation of Urban Quality of Life, a complex index is constructed by using multicriteria analysis. For this purpose, Quality of

Life controlling factors such as built space, natural, socio-economic, and cultural environment, infrastructure and services, and the quality of housing were analyzed within a GIS environment.<sup>14</sup>

Chorley and Haggett mention that one of the approaches to model building can start with the simplification of a system to its essential and then start building an increasingly complex structure, by induction, a priori reasoning, and so on. Hardly there may be a standard procedure for the construction of a system model never before modeled, but the suggestion of ways to address the problem given by the authors can help in a first approach to the problem. The original thought processes are difficult to understand and explain, and the solutions of the problems auto-suggest in strange shapes and times. It is not expected that two researchers working on the same subject address two models in the same way. What is expected is that they start with a topic of interest and then try to model it their own way.<sup>15</sup>

## Conclusion

Geography is a spatial science concerned with study of space, place and locality with reference to structural and functional organization of physical and human phenomena. Though quality of life has been a cross-disciplinary research theme, geographers have a significant position in dealing with quality of life in the spatial realm. Though ingredients of quality of life are always a matter of great debate, geographers have an advantage in presenting a holistic view. Many spatial models have developed since the quantification of geographical research, especially after the work of David Harvey, Chorley and Haggett. Now days geographers are much concerned with spatial modelling of quality of life using GIS tools.

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