Acta Universitatis Sapientiae
Agriculture and Environment, **4**, (2012) 51–58

The quality of life as an aspect of environmental assessment

Gabriella Mária NAGY
gbrll_nagy@emk.nyme.hu

Botond HÉJJ
hejjb@emk.nyme.hu

University of West Hungary, Faculty of Forestry,
Institute of Economy of Forest Assets and Rural Development,
Sopron, Hungary

Abstract. Our environmental assessing model is subordinated to the value of quality of life of an exact community; in this case, Sopron city's community. The real quality of life is influenced by economical, natural, and human relationship. Human behaviour is based on objective changes in the subjective response. These reactions, which are conscious and unconscious judgments of tangible expression, are typical of the local society. We presume that the relation between objective and subjective elements is correlate and expressible in a multi-variable model. This model can be characterized by the local society's and community's attitudes towards environment.

Keywords: environmental quality, -load, -awareness, green-field system, welfare

1 Introduction

The real quality of life is influenced by economic, natural, and human relationships, as well as, their perceptions by the individual and society.

Human behaviour is based on subjective response given on objective changes. These reactions are typical for a local society and are conscious and unconscious judgments of tangible expression. We assume that the relations between objective and subjective elements are correlate and expressible in a multivariable model. This model can be characterized by the attitudes of the local society and community towards environment.

2 Materials and methods

Our environmental assessing model is subordinated to the value of quality of the life of a given community; in this case, the community of Sopron city. We considered Allardt's quality of life model [12] to be complex enough for the study.

Table 1: *Allardt*: Having, Loving, Being - An alternative to the Swedish Model of Welfare Research [12]

	Objective indicators	Subjective indicators
Having		
Tangible and non-personal needs	1. The standard of living and environmental conditions in the objective measurement	4. Subjective feelings: the living conditions of satisfaction/dissatisfaction
Loving		
Social needs	2. The objective measurement of relations with others	5. Satisfaction/dissatisfaction of relationships
Being		
Needs of personal development	3. The objective measurement of relations with society and the nature	6. Of alienation or the subjective feeling of personal fulfilment

Assumptions of the research:

Human behaviour is based on a subjective response to objective changes; same inputs in this case induce a similar output.

Applying Allardt's quality of life model to the environmental factors, a functional relation is to be assumed between the objective - subjective factor pairs.

The relationship between man and his environment is measurable using a multi-variable model that is characterized by a well-positioned local society and the surveyed community attitudes to the environment.

Community responses are characterized by the local society's judgments, so, the changes and correlations between the responses are assumed.

The environment is greatly dependent on the inhabitants of a town; the personal ties are fundamentally influenced by the need to improve their environment, which then forms a direct reflection of the urban environment.

A development is characterized by the response of the community's tolerance level in environmental load, satisfaction, and level of environmental awareness.

We used Allardt's model of quality of life in the wider environment as follows:

Table 2: Environmental-related quality of life model (KVÉM model)

	Objective indicators	Subjective indicators
Having Tangible and non-personal needs	1. Environmental quality (projection of material wealth)	4. Satisfaction with the environment - a subjective degree of ownership
Loving Social needs – role of society	2. The social impact of the environment – environmental load	Tolerating the load of the environment – attachment to the residential environment
Being Needs of personal development – role of ego	3. Physiological needs – Environment determines the maximum welfare	6. A personal level of alienation from the environment – environmental awareness

Objective indicators:

In the course of the objective assessment of the environment, all elements that make up the environment should be measured, and their qualitative and quantitative indicators will be placed in a regional system in order to gain a truly objective picture of the environmental values. The value of the environmental components and elements should be explored in the course of nature, landscape, and built elements of the environment as a function of available maximum and optimum load. The measurement of environmental impact must take into account the degradation of certain elements of the highly loaded nodes and their negative and positive effects on the environmental systems. The determination of the maximum available wealth allows the levelling out of the differences in the model.

Subjective indicators:

The subjective assessment of the environment is based on a value of the community's judgment by measuring reactions induced by the changes. In order to ensure adequate visibility, the environmental development efforts, opportunities, and social trends should be explored by grasping the forward direction of changes. These social trends can best measured with questionnaires and through personal interviews.

When transforming the model of Allardt to environmental factors, we assumed three objective-subjective indicator pairs that together are able to express their own perception of a community environment.

3 Results and discussions

The interactions between indicator pairs assumed in the model as follows:

1. "Having" function (H) - Quality of environment

To determine the immediate value of the environment, the quality and the quantity of every environmental component was taken into account in order to obtain as much information as possible of the offered benefits regarding the surrounding environment. This way, we defined the quality in an exact moment, and furthermore, its improvement through an investment. As a result of the investment, we presumed a positive change on the subjective axis, which depends on the exposure of the investment.

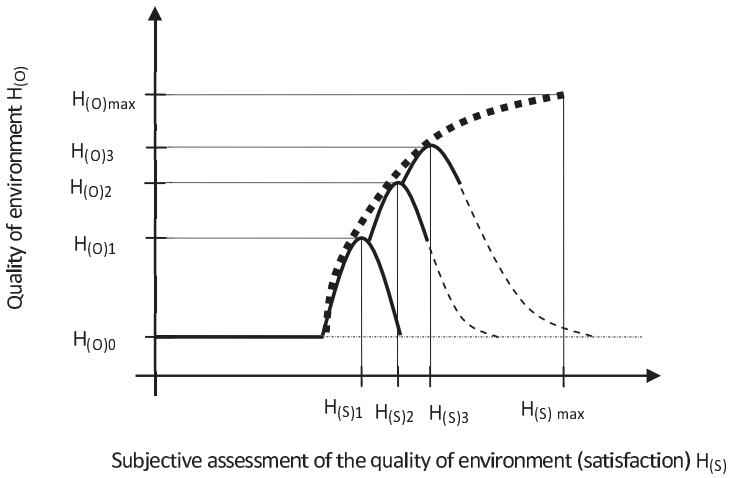

Figure 1: The "Having" function relation (H)

We defined two limits of the function: the top limit on the subjective axis is the maximum effect of the environment on the life of the individual or the community; the lowest limit on the objective axis is the level of environment without any development, which we considered as stable.

We assumed that there are environmental development programmes constantly running as a usual practice of Hungarian local governments, and citizens are informed about them. This way, the effects of the improvements can be built on one another, but without further development, the impact may fall back even to the base level. Therefore, this variable of this function is defined as a variable to be measured over time. We proposed that the sequential developments reach an ever smaller maximum, which is depicted in

typical bell-shaped curves leading to an overall logarithmic curve issue. This way, the maximum level of actions achieved during the first few actions determines the maximum available saturation level, assuming a similar intensity of development.

2. "Loving" function (L) - Load of the environment

We identified the load of the environment as the main social need towards it. We examined the pressure of the physical elements and the amount of overuse of green-field elements in order to define the objective load. The subjective degree of the function is the toleration level of the population.

We defined two limits of the function: the top limit on the objective axis is the highest value of the pressure of environment that is still convenient for human life; the lowest value on the objective axis is the level of pressure that is still possibly perceived.

The typical deceleration of the function's curve is distorted by the attitude of long-term residents, which increases the toleration because of their binding to the actual living environment.

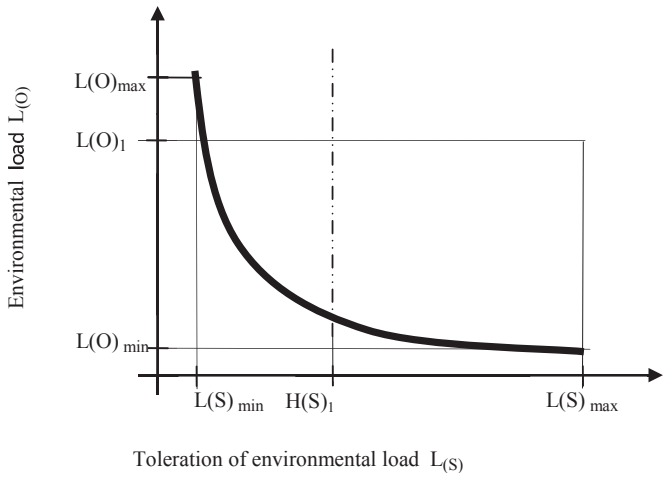

Figure 2: The "Loving" function relation (L)

3. "Being" function (B) - Environmental awareness

We determined the available maximum prosperity as the highest physiological need, which depends on local economy while the environmental value-adding effect is dependent on economy and property, as well. We noted the environmental awareness as the subjective side of personal needs.

We defined two limits of the function: the top limit of the subjective axis is determined by the actual knowledge from environment and the level of exposition regarding the topic; the lower limit of the saturation curve expresses that environmental awareness always has a minimal level, which is higher than zero, and therefore, this level is independent form locality.

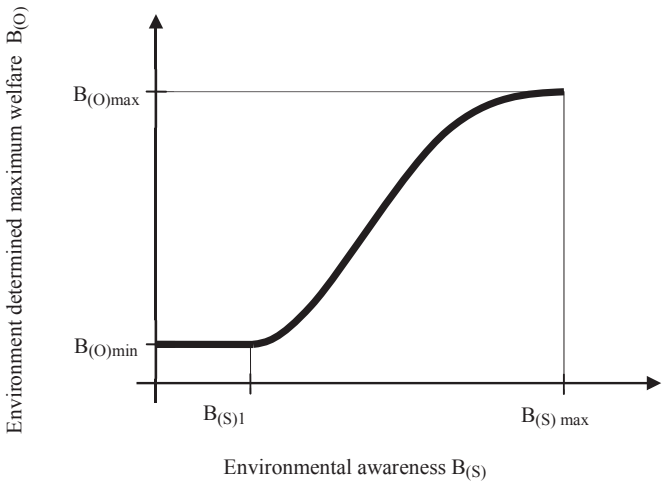

Figure 3: The "Being" function relation (B)

The evaluation of objective and subjective indicators is relatively supported by Maslow's Hierarchy of Needs [8].

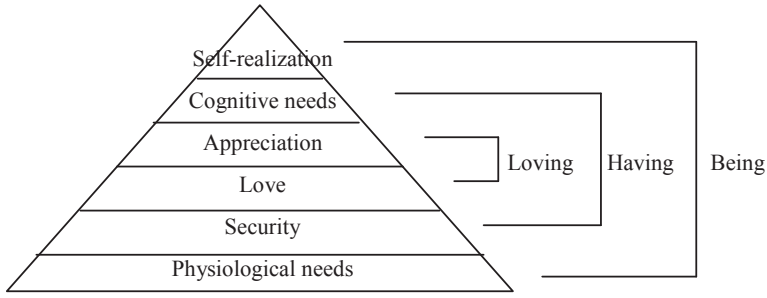

Figure 4: Application of Maslow's Hierarchy of Needs in the KVÉM model

The Hierarchy of Needs assumes that the relativity of the needs to one another is decreasing, what is counterbalanced in our system.

The combined total of the three indicator pairs is what follows:

$$\text{KVÉM} = \text{H} + \text{L} + \text{B} = \text{H}(\text{h}_{(\text{O})}, \text{h}_{(\text{S})}) + \text{L}(\text{l}_{(\text{O})}, \text{l}_{(\text{S})}) + \text{B}(\text{b}_{(\text{O})}, \text{b}_{(\text{S})}) \quad (1)$$

The objective of our research was to create a quality of life index, which is based on a complex system of environmental evaluation.

The model is a simultaneously identifiable system, where all functional relationships between the variables are assumed. The validity of assumptions is a function of the standard deviations of subjective variables.

4 Conclusion

The noosphere as a lining environment of human beings depends on the people and their personal attachment to the place of residence and has a fundamental influence on the need for environmental development, which reflects back on the urban environment.

A possible way of use of the model is measuring the success of local action programmes. The price-value analysis is well characterized by the previous campaigns, and based on the results, the level of the next investments can be optimized.

Acknowledgements

Thank you for the tireless help offered each day by all the colleagues at the Institute of Economy of Forest Assets and Rural Development.

References

[1] Adler J., Akar L., Petz R. (2004), A turizmus makrogazdasági szerepe (Tourism role in macro economy), GKI Gazdaságkutató Rt. Budapest.

[2] Ágoston L. (ed.) (2007), Az életminőség fogalmán túl (Beyond the concept of the quality of life), Demos Magyarország Alapítvány, Budapest.

[3] Chen W. Y. (2010), Landscape amenity and disamenity: a case of Shenzhen, China, (Department of Geography, The University of Hong Kong) *– EFUF – UEFRO Conference, Tuln an der Donau, June 2010.*

[4] Dexler D. (2004), Táj és tájértékelés (Landscape and landscape assessment), PhD dissertation, Corvinus Egyetem, Budai Campus, Budapest

[5] Inglehart R. (1990), Culture Shift, Princeton University Press, Princeton USA

[6] Scarpa, R., Boungiorno, J., Hsue, J. S., Abt, K. L. (2000), Assessing the non-timber value of forests: A revealed-preference, hedonic model, Journal of Forest Economics, 6(2), pp. 83-108.

[7] Márkus L., Mészáros K. (2000), Erdőérték-számítás, Az erdőértékelés alapjai (Assessing of the value of forest, Basics of valuation of forest), Ed.: Mezőgazdasági Szaktudás, Budapest.

[8] Maslow, A. (2003), A lét pszichológiája felé (Towards the psychology of being)

[9] Michalkó G. (2010), Boldogító utazás, a turizmus és az életminőség kapcsolatának magyarországi vonatkozásai (Happy journey, Relations of tourism and livelihood in Hungary), Hungarian Academy of Sciences, Geographical Research Institute, Budapest.

[10] Pongrácz L. (ed.), (2008), Foglalkoztatást elősegítő munkaügyi kutatások (Labour researches of employment promotion), OFA Kutatási Évkönyv, 4, Budapest

[11] Szlávik J. (2005), Fenntartható környezet- és erőforrás-gazdálkodás (Sustainable environment and resource mamagement), Ed.: Complex Kiadó, Budapest

[12] Utasi Á. (ed.) (2006), A szubjektív életminőség forrásai: biztonság és kapcsolatok (The sources of subjective quality of life: safety and relations), Hungarian Academy of Sciences, Institute of Political Sciences, Budapest.