



A Cognitive Model of the Rural Settlements

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Generally speaking, any rural settlement has three elements: population (A), hearth (B) and estate (C), which are in a systemic connection (fig. 1).

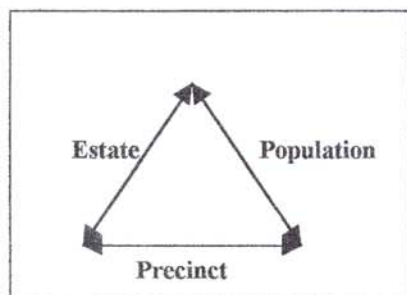


Figure 1. The system model of rural settlement.

The estate and the hearth are territorial component parts, characterised by a dimensional and structural stability.

The population (B) represents the most dynamic component part, which establish, through aware actions, a certain use and countenance to the owned territory.

The total number (1) of the population represents the quantitative expression of the working ability, as well as the consumption in its most various aspects.

The population between 0 and 14 years old (5) gives a general view over the long-term demographic stock and over the basic instruction (teaching) needs. The population between 15 and 64 (6) years old represents the labour force, its number and quality determining, in a considerable way, the

volume of the production. The population over 64 years old (7) represents, besides the one between 0 and 14 years old, the supported population, although in many cases the work of children and old people is important for certain spheres of rural economy.

The active population (8) represents the real supply of labour force. Its distribution on economical spheres (9, 10, 11) shows both its quality and also the major functional type of the rural settlement.

The low index of non-agricultural activities expresses dependence, more or less tight, on basic activities, especially the agriculture ones.

The commutation (13, 14), through its specific character (incoming and outgoing), shows a certain type of relations with the exterior, which takes as a manifest form the bigger and relatively constant profits, comparing with those proceeded from basic activities.

The dependence report (15) tolerates some adjustments if compared with the urbane, considering the fact that the old and even the children work is a regular coordinate in the countryside.

The hearth (B) represents the synthetic spatial expression of a rural settlement. This is why we are firstly concerned with the total surface of the settlement (16) and also with the hearth surface (17), which represents quantitative index of maximum generalisation. There can not be established correlation's between hearth surface and the economical situation of the settlement. Usually, the hearth concentrates the farms but also industrial units' (18) and some items, which refer to general services (19). This is why the value of fixed funds

and their efficiency is decisive for the economical potential (21,22).

The territorial survey of the hearth shows the degree in which the territory is taken into possession and implicitly the amount of fields occupied with buildings or unproductive lots. (20)

Most of the rural settlements in Romania, besides their multiple functions, do not threaten the basic production, because in their area are placed the gardens and the orchards.

The potential of communication (23) refers to the degree in which the rural settlements have access to the different ways of communication, depending on different levels of modernization. It is complemented by the degree in which the settlements are endowed with telephonic nets. The poor quality of the most rural roads and the insufficiency of telephone connecting are the major obstacles in the process of the modernization of the countryside at a national level.

The water resources (24) and water supply are compulsory component parts of living and viability. Generally there prevail the individual water sources from wells and springs, but the number of the rural settlements with farms endowed with modern systems of water supply is very small. The volume and the quality of water provide clues on the health of the population and on the possibility to assure and control the consumption.

The number of the farms in the hearth (25) generally shows the socio-economical division of the population, whereas the building dignity in the hearth (26) gives a clue on the structural type of the settlement (assembled, dispersed, and scattered).

The index of public utilities renovation (27) points out the weight of the new buildings from the total existent ones. To establish this, it must be chosen a temporal limit. This doesn't mean that every new building is modern or functional. The economic autarchy of the farms in Romania represents a major obstacle in the countryside modernization.

The value of the industrial production and the value of their services (29, 30) (if such units exist) are overall development indexes whereas the value of the sold goods provide information on the financial resources of the population.

The endowment potential (32) is a complex indicator that offers information on the settlement endowment with diverse component parts (referring to production, education, culture, commerce, administrative, health). The broader the offer of such devices is, the more prosperous the settlement is.

The number of buses (trains) in a day (33) points out the strength of the connections with the nearest city or with other settlements, whereas the number of the motorcars (34), besides the increased

mobility of the population, shows pretty convincing a certain level of wellbeing.

The number of the houses with bathroom (35) gives us an indirect view over the population hygiene.

The habitat potential (36) is expressed usually by the habitable surface (square meters as compared with the number of the inhabitants). Under the circumstances of the demographically emptying of the villages, they have a higher habitat potential than the urban space.

The individual food consumption (37) and the variety of the meals made a real progress if we take into account the previous periods. The daily caloric rations are in normal limits with the considerable contribution of the animal proteins. It still prevails the practices of pork conservation (salting and smoking).

The living standard (38) represents the synthetic and palpable expression of the wellbeing, materialized in the span of life or human development index.

The estate surface (39), expressed in hectares, represents a general indicator of the available space. Usually, the surface of the estate is correlated with the natural quality of the soil, at the same number of inhabitants.

The value of the fix funds in agriculture (40) (tractors, ploughs etc.), the endowment degree of the agriculture.

The climatic potential (41) points out the termic and pluviometric characteristics of the territory, in deep correlation with the altitude, the inclination and the degree in which the slopes are exposed to the sun.

The surface of agricultural field (42), as a major part of the space of the rural settlement, is an indicator that has a direct impact on the volume of the agricultural production.

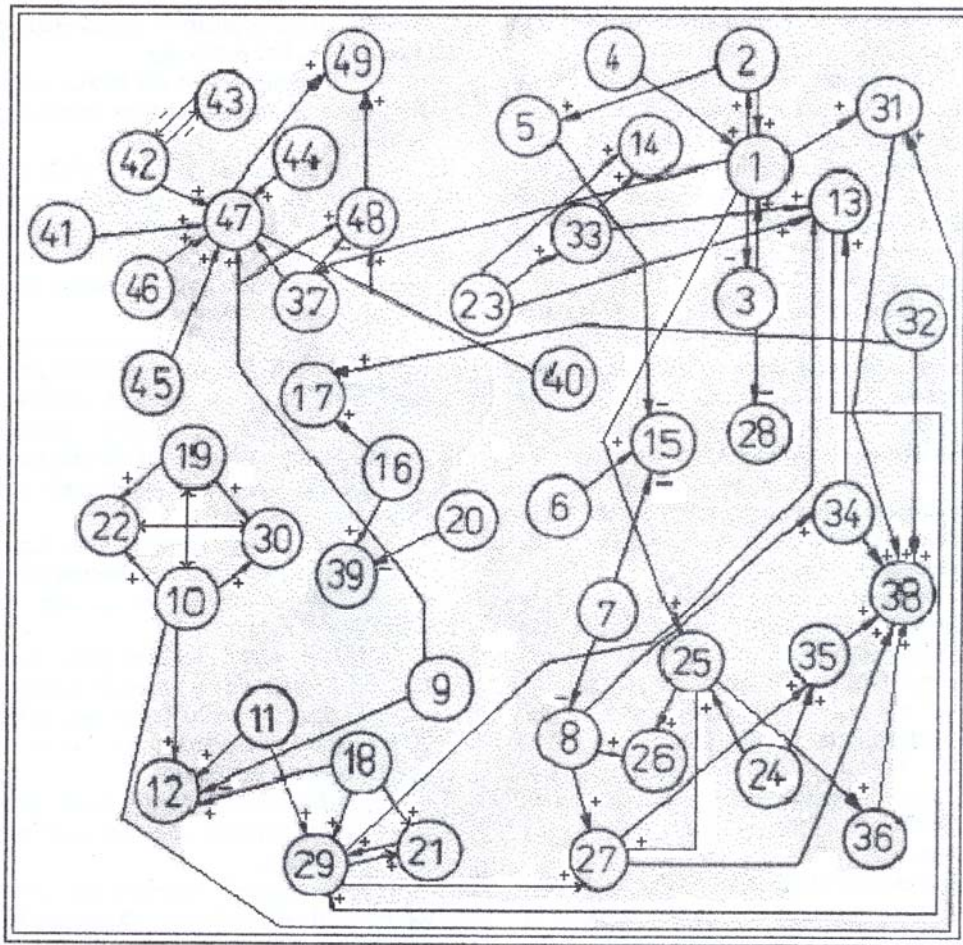
The forestry surface (43) shows the degree of the environmental strength of the settlement and the capacity of energetically support it may offer for the inhabitants.

The number of arable hectares as compared to the number of tractors generally gives the mechanization degree (44).

The chemification degree (45) representing the quantity of chemical fertilizer used at one hectare of cultivated land (the value of this indicator must be analyzed very carefully because it has negative effects on the biotic environment and on the phreatic waters).

The indices of favourability of the soils (46) is established for each rural settlement by the experts commission through the bonus method.

The value of the vegetal production (47) is estimated by the relating the number of the assortments at the average price in the market. The same thing is also valuable for the animal production (48). Through assortimental



Legend

The Population Variables

1. The population (total number).
2. The birth rate.
3. The death rate.
4. The natural population growth rate.
5. The 0-14 year old population.
6. The 15-64 year old population.
7. The population over 64 year.
8. The employed population.
9. The population employed in agriculture.
10. The population employed in the tertiary sector.
11. The population employed in industry.
12. The indices of non-agricultural activities.
13. Commuting to the village.
14. Commuting from the village.
15. The age dependence ratio.

The Variables of the Precincts

16. The total surface of the locality.
17. The dimension of the precincts.

18. The value of the real estate and tools in industry.
19. The value of the real estate and tools in the tertiary sector.
20. The development land properties.
21. The efficiency of the real estate in industry.
22. The efficiency of the real estate in the tertiary sector.
23. The communication potential.
24. The water resources.
25. The number of households within the precincts.
26. The density of the buildings within the precincts.
27. The index of building renewals.
28. The number of the squatting places.
29. The value of the global industrial output.
30. The value of the services provided.
31. The value of the sold merchandise.
32. Facilities.
33. The number of daily bus lines (train).
34. The number of cars.
35. The number of houses with bathroom facilities.

- 36. The habitation potential.
- 37. The individual food consumption.
- 38. The standard of living.

The Estate Variables

- 39. The size of the estate.
- 40. The value of the estate and tools in agriculture.
- 41. The climatic potential.
- 42. The surface of the land for agriculture.

- 43. The surface of the forests.
- 44. The range of mechanization.
- 45. The range of the use of chemicals.
- 46. The index of land favourability.
- 47. The total value of vegetal agricultural output.
- 48. The total value of animal agricultural output.
- 49. The total portable capacity.

Figure 2. The choice of the variables and the construction of the model.

differentiation one may minutely establish the agricultural profile and its orientation.

The capacity to support the people (49) represents a final synthetic indicator that points out the biological potential to provide food for the population.

The excedent of food production shows one type of commercial agriculture that is in different stages of modernization and market orientation, whereas the lack of agricultural products on the market provides information on the characteristics of agriculture of subsistence.

The model we have dealt with can be developed by adding another auxiliary indicators which are suggestive, such as the average production as related to one hectare, the number of cattle and the average production.

Finally, by bonus method of indicators, it may be established one final framework on the degree of agricultural development, for each rural settlement.