Christaller (model of)

Model elaborated by the German geographer Walter Christaller in 1933, derived from the central places theory which gives account of the size, spacing and number of cities. The model describes the hierarchical organisation of a network of cities according to the level of services they provide, and their regular spatial disposition on the vertices of equilateral triangles or at the centre of hexagons.

An undifferentiated geographical space is imagined, a homogeneous plain, where density of population is uniform, where all inhabitants have the same revenue to spend and where goods are offered at identical prices, to which only distance costs are added, depending only on distance to the centre. One also assumes a rational behaviour of individuals, who try to obtain goods and services at the lowest cost and thus shop in the closest centre. The disposition of central places which allows to serve the whole population while covering the whole space ("pavage" (paving) of the territory) depends then on which standpoint is favoured:

â€¢ market principle: if the aim is to maximise the number of central places (better serving of population) while ensuring equitable sharing of customers among centres, cities of a same hierarchical level are disposed on the vertices of equilateral triangles. The limit of influence of each one goes through the middle of each edge of the triangle, which draws around each city an hexagonal area of influence. Each centre of lower level is shared between the influences of three upper level centres. The area of the zone served by a centre is three times larger than that which is served by a centre of the immediate lower level (ratio k=3);

â€¢ transport principle: if the previous configuration of cities is distorted so as to place several ones on a same transport axis, in order to reduce the cost of traffic infrastructure, this gives a hierarchy where the size of the area of influence of an upper level centre is four times larger than that of a centre of immediate lower level (k=4);

â€¢ administrative principle: functions of political framing and of territorial management are not shared between competing centres, but are exerted inside districts with fixed limits and without overlap. Each city in the centre of a hexagonal district controls six centres of lower level, and the surface of its area of influence is seven times larger than that of a centre of lower level (k=7).

Bibliographie