Central place theory is associated with which of the following terms

This article has a blurry quote style. The references used can be made clearer with a different or consistent style of quote and foot comment. In 2016 he was written by the International (Learn How and When to Remove This Template Message) Central place theory is a geographical theory that seeks to explain the number, size and location of settlements in a housing system. [1] It was introduced in 1933 to explain the spatial distribution of cities across the landscape. [2] The theory was first analyzed by the German geographer Walter Christaller, who claimed that settlements only served as central places that provide services to surrounding areas. [1] Building the theory to develop the theory, Christaller made the following simplistic assumptions:[3] All areas have: an unlimited isotropic (all flat), homogeneous, unlimited surface (abstract space) an evenly distributed population all settlements are equal and exist in a triangular lattice pattern evenly distributed resources distance decay mechanism perfect competition and all sellers are economical people maximize their profits consumers are of the same income level and the same shopping behavior all consumers have a similar purchasing power and demand for goods and services. Consumers visit the nearest central locations that provide the feature they require. They minimize the distance to be raised no supplier of goods or services is able to earn excess profits (each supplier has a monopoly over an inland space) Therefore, the trading areas of these central locations that provide a particular good or service are all of the same size, it is only one type of transport, and this would be equally simple in all directions transport costs are directly proportional to the distance travelled Theory then rely on two concepts : threshold and range. Threshold is the minimum market (population or income) needed to get to the sale of a particular good or service. Reach is the maximum distance consumers are prepared to travel to obtain goods - at some point the cost or disadvantage will outweigh the need for the good. The result of these consumer preferences is that a system of centers of different sizes will appear. Each center will deliver specific types of items that form levels of hierarchy. In the functional hierarchies, generalizations can be done regarding the distance, size, and function of settlements. The larger the settlements are in size, the fewer in number they will be, it will that there are many small villages, but few large cities. The larger the settlements grow in size, the greater the distance between them, it will want villages usually found close together, while the cities are distributed much further apart. As a settlement increases in size, the range and number of functions increase . As a settlement increases in size, the number of services with higher also increase, it will provide a greater degree of the Services. The higher the order of goods and services (more durable, valuable and variable), the greater the variety of goods and services, the longer the distance people are willing to travel to obtain them. At the foot of the hierarchy pyramid are shopping centers, newsstands etc. selling low order goods. These centers are small. At the top of the pyramid are centers that sell high order goods. These centers are big. Examples of goods and services with low orders are: newspaper booths, groceries, bakeries and post offices. Examples of high order goods and services include jewelry, large shopping malls and arcades. They are supported by a much larger threshold population and demand. Predictions He deduced that settlements would tend to form in a triangular/hexagonal lattice, as it is the most effective pattern of operating areas without overlap. [1] In the orderly arrangement of an urban hierarchy, seven different main orders have been identified by Christaller, which provides different groups of goods and services. Settlement is regularly distributed - equal distance between the same order centers, with larger centers farther apart than smaller centers. Settlements have hexagonal market areas, and are most effective in number and functions. The different layouts predicted by Christaller have K values showing how much the Sphere of influence of the central locations takes in – the central location itself counts as 1 and each part of a satellite counts as its part: K = 3 marketing principle K = 3 Principle According to the marketing principle K = 3, the market area of a higher order (node) occupies a third of the market area in each of the subsequent lower size site (node) located next door; The lower size nodes (6 in numbers and other larger circles) are located on the corner of a largest hexagon around low value high order settlement. Each high-order settlement gets a third of each satellite settlement (which is 6 in total), thus $K = 1 + 6 \times 1/3 = 3$. But in this K = 3 marketing network the distance traveled is minimized. K = 4 transport/traffic principle K = 4 Principle According to K = 4 transport principle, the market area of a higher order includes half of the market area of each of the six nearby lower order locations, as they are located on the edges of hexagons around the high-profile settlements. This generates a hierarchy of central locations that results in the most efficient transport network. There are maximum central locations possible located on the main transport routes connecting higher order centers. The transport principle involves minimizing the length of the roads that connect central locations at all hierarchy levels. In this nesting system, the lower order centers are located along the roads that connect the higher order centers. adjustment of places along a road leads to the minimizing of road length. But for each higher order center, there are now four centers with immediate lower order, as opposed to three centers under the marketing principle. K = 7 administrative principle K = 7 Principle According to K = 7 administrative principle (or political-social principle), settlements are nested according to sevens. The market areas in the smaller settlements are completely enclosed within the market area of the larger settlement. Because tributaries cannot be shared administratively, they must be assigned exclusively to one place with higher orders. Effective administration is the control principle of this hierarchy. Evaluation The validity of the location theory may vary with local factors, such as climate, topography, development history, technological improvement and personal preferences of consumers and suppliers. However, it is still possible to discern Christaller patterns in most distributions of urban centers, although these patterns will often be distorted by the

terrain or imperfect due to suboptimal (with regard to optimal distribution of centers) historical development decisions. Economic status for consumers in an area is also important. Consumers of higher economic status tend to be more mobile and therefore bypassing centers provide only lower order goods. The application of central site theory must be tempered by an awareness of such factors when planning shopping center space location. Purchasing power and density affect the distance between centers and hierarchical schemes. Sufficient densities will allow, for example, a grocery store, a lower order function, to survive in an isolated place. Factors that shape the scope of market areas: Land use: industrial areas can provide little in the way of a consumer population Poor availability: This can limit the scope of a center's market area Competition: this limits the scope of market areas in all directions Technology: high mobility provided by the car allows overlap of market areas Market area studies provides another technique for using central location theory as a retail planning tool. The hierarchy of shopping centers has been widely used in the planning of new cities. In this new city, the hierarchy of business centers is evident. One main shopping center provides mostly durable goods (higher order); district and local shopping centers supply, constantly, convenience (lower order) goods. These centers offered in the new city plan are not free of external competition. The consequences of surrounding existing centres at the new city centres cannot be ignored. Examples The newly recovered polders in the Netherlands provide an isotropic aircraft on which settlements have evolved, and in certain areas 6 small towns can be seen around a larger city, especially in and Flevoland. The Fens of East Anglia in the UK also provides a large area of flat land with no natural barriers to settlement development. Cambridge is a good example of a K= 4 Transport Model Central Place, although it is surrounded by 7, instead of 6, settlements. Each satellite is 10-15 miles from Cambridge and each is located on a main road leading out of Cambridge: Ely - A10 north Newmarket - A1303 (now bypassed by A14/A11) north-east Haverhill - A1307 southeast Saffron Walden - A1301 south Royston - A10 south-west St Neots - A428 west St Ives - A14 northwest As all satellite settlements are on transport links, This is a good example of a K = 4 CPT model (although in this case it is K = 4.5 due to 7 instead of 6 settlements). Another example of the use of CPT was in the delimitation of medical care regions in California. A hierarchy of primary, secondary and higher care cities was described, and the population size and income needed to support each medical specialty in California determined. Criticism The central site theory has been criticized for being static; it does not incorporate temporally aspect in the development of central places. Furthermore, the theory remains well when it comes to agricultural areas, but not industrial or post-industrial areas due to their diversified nature of different services or their varied distribution of natural resources. Recent development: a dynamic concept for CPT Recent theoretical development has shown that it is possible to overcome the static aspect of CPT. Veneris (1984) developed a theoretical model that starts with (a) a system of evenly distributed (medieval) cities; (b) new economic activities are located in some cities and thus cause differentiation and evolution into a hierarchical (industrial) city system; c) further differentiation leads into a record hierarchical (post-industrial) city system. This development can be modeled using the three major CPT theories: stage (a) is a system of von Thünen isolated conditions; stage (b) is a christalleric hierarchical system; (c) is a Löschian record hierarchical system. Moreover, the stage (b) corresponds to Christopher Alexander's three city, while (c) is similar to his lattice system (after his dictum city is not a tree). The importance of a city and other theoretical considerations According to Margot Smith, Walter Christaller failed in his development of CPT in 1930 by using the size of the population and the number of phones to determine the importance of a city. Smith realized that while population size was important for the area served by a city, the number of types of services offered was more important as a measure of the importance of a city to attract consumers. Using CPT to describe the provision of medical care in California, Smith counted the number of physician specialties to determine importance of a city in the provision of medical care. Christaller also failed in the assumption that cities are emerging. In California and much of the United States, many cities were on the railroad when the tracks were laid. In California, cities founded by the railroad were 12 miles apart, the amount of track a section crew could maintain in the 1850s; larger cities were 100 miles apart, the distance a steam engine could travel before you need water. Older cities were founded a day's riding trip apart by the Spanish priests who founded early missions. In the medical care regions described by Smith, there is a hierarchy of services, with primary care ideally distributed across an area, medium-sized cities offering secondary care, and metropolitan areas with higher care. Income, population size, population demographics, distance to the next service center, all had an influence on the number and kind of specialists located in a population center. (Smith, 1977, 1979) For example, orthopedic surgeons are found in ski areas, obstetricians in the suburbs, and boutique specialties such as hypnosis, plastic surgery, psychiatry are more likely to be found in high-income areas. It was possible to estimate the size of the population (threshold) needed to support a specialty, and also to associate specialties that had to cooperate and locate near each other, such as hematology, oncology and pathology, or cardiology, thoracic surgery and lung surgery. Her work is important for the study of doctor placement – where doctors choose to practice and where their practices will have sufficient population size to support them. The level of income in the population determines whether adequate doctors will practice in an area and whether public subsidy is necessary to maintain the health of the population. The distribution of medical care in California followed patterns that had to do with the settlement of cities. Cities and their inland have characteristics of the traffic principle (See K = 4 above) usually have six thoroughfares through them – thoroughfares, including highways, rivers, railways and canals. They are most efficient and can deliver the lowest cost services because transportation is cheaper. Those who have settled on the market principle (K = 3 above) have more expensive services and goods, as they were founded at times when transport was more primitive. In Appalachia, for example, the market principle still prevails and rural medical care is much more expensive. Making central site theory operational CPT is often criticized for being unrealistic. However, several studies show that it can describe existing urban systems. An important problem is that Christaller's original formulation is flawed in several ways (Smith). These errors become apparent if we try to make CPT operational, that is, if we try to derive numerical data out the theoretical schemata. These problems have been identified by Veneris (1984) and then by Openshaw and Veneris (2003), which also provided theoretical sound and consistent solutions, based on a K=3, 37-center CP system: Shutdown problem. Christaller's original plan involves an infinite landscape. Although each market has limited size, the overall system has no limits to it. Neither Christaller nor the early related literature provide any guidance on how the system can be found. Openshaw and Veneris (2003) identified three different types of closure, namely (a) isolated condition, (b) territorial closure and (c) functional closure. Each type of closure involves different population patterns. Generating tours. According to the basic christalleric logic and the identified closing types, Openshaw and Veneris (2003) calculate tour patterns between the 27 centers. Calculation of inter- and intra-zone costs/distances. Christaller assumed freedom of movement in all directions, which would involve airline distances between the centres. At the same time, he provided specific road networks for the CP system, which does not allow flight distances. This is a major mistake that neither Christaller, nor early related literature has identified. Openshaw and Veneris (2003) calculate costs/distances that are in accordance with the christalleric principles. Central location theory and spatial interaction models Further information: Spatial interaction models It was once assumed that central location theory is not compatible with spatial interaction models (SIM). It is paradoxical that sometimes cities or shopping centers are planned with CPT, and then evaluated with SIM. Openshaw and Veneris (2003) succeeded in linking these two major regional theories in a clear and theoretically consistent way: using the data they derived from the operationalization of CPT, they experimented with multiple SIM cards. After a thorough examination via computer simulation, they reached important theoretical and practical conclusions. Smith was able to refine medical care regions (the area), describe the hierarchy of medical services, the population base required by each medical specialty (threshold), the effectiveness of regions, and the importance of how an area was settled for the provision of medical care, that is, according to traffic, market or administrative principles. What's central place? See also Demographic Gravity City (Weber book) Fractal Penrose tiling Zipfs law Boundary problem (in spatial analysis) Unified settlement planning Notes ^ a b c Goodall, B. (1987) Penguin Dictionary of Human Geography. London: Penguin. ^ Grotter, R. W. (2004). In 1999, an extensive cover icon was carried out to Routledge. In 1999, 100,000 people were ^ References Openshaw S, Veneris Y, 2003, «Numerical with central location theory and spatial Modeling Environment and Planning A 35(8) 1389–1403 ([1]) Smith, Margot W. Leges specialties and medical trade areas: An application of central place theory. Papers and proceedings of applied geography conferences, Vol. 9, West Point NY 1986. Smith, Margot W. A guide to the demarcation of medical care regions, medical trade areas and hospital service areas. Public Health Reports, 94:3:247 May 1979 Smith, Margot W. The Economics of Physician Location, Western Regional Conference, American Association of Geographers, Chicago, Illinois, 1979 Smith, Margot W. Distribution of Medical Care in Central California: a Social and Economic Analysis, Thesis, School of Public Health, University of California, Berkeley, 1977 - 1004 pages Veneris, Y, 1984, Information Revolution, Cybernetics and Urban Modeling, PhD Thesis, University of Newcastle upon Tyne, United Kingdom. External links Walter Christaller's theory of central locations Walter Christaller: Hierarchical patterns of urbanization Christaller's Central Place Theory Christaller - Course notes Central places Theory Taken from