

## Central Place Theory

Central place theory is a spatial theory in urban geography that attempts to explain the reasons behind the distribution patterns, size, and number of cities and towns around the world. It also attempts to provide a framework by which those areas can be studied both for historic reasons and for the locational patterns of areas today.

The theory was first developed by the German geographer Walter Christaller in 1933 after he began to recognize the economic relationships between cities and their hinterlands (areas farther away). He mainly tested the theory in Southern Germany and came to the conclusion that people gather together in cities to share goods and ideas and that they exist for purely economic reasons.

Before testing his theory however, Christaller had to first define the central place. In keeping with his economic focus, he came to the conclusion that the central place exists primarily to provide goods and services to its surrounding population. The city is in essence, a distribution center.

### Christaller's Assumptions

To focus on the economic aspects of his theory, Christaller had to create a set of assumptions. He decided for example that the countryside in the areas he was studying would be flat, so no barriers would exist to impede people's movement across it. In addition, two assumptions were made about human behavior: 1) Christaller stated that humans will always purchase goods from the closest place that offers the good, and 2) whenever demand for a certain good is high, it will be offered in close proximity to the population. When demand drops, so too does the availability of the good.

In addition, the threshold is an important concept in Christaller's study. This is the minimum number of people needed for a central place business or activity to remain active and prosperous.

This then brings in the idea of low-order and high-order goods. Low-order goods are things that are replenished frequently such as food and other routine household items. Because these items are purchased regularly, small businesses in small towns can survive because people will buy frequently at the closer locations instead of going into the city. High-order goods though are specialized items such as automobiles, furniture, fine jewelry, and household appliances that are bought less often. Because they require a large threshold and people do not purchase them regularly, many businesses selling these items cannot survive in areas where the population is small. Therefore, they often locate in large cities that can serve a large population in the surrounding hinterland.

### **Central Place Size and Spacing**

Within the central place system, there are five sizes of communities. A hamlet is the smallest and is a rural community which is too small to be considered a village. Cape Dorset (population 1200), located in Canada's Nunavut Territory is an example of a hamlet. The rank order of central places is:

- Hamlet
- Village
- Town
- City

### **Regional Capital**

Examples of regional capitals would include Paris, France or Los Angeles, California. These cities provide the highest order goods possible and have a huge hinterland.

### **Central Place Theory Geometry and Ordering**

If visually imagined, the central place is located at the vertexes (points) of equilateral triangles. They then serve the evenly distributed consumers who are closest to the central place. As the vertexes connect, they form a series of hexagons- the traditional shape in many central place models.

This shape is ideal because it allows the triangles formed by the central place vertexes to connect and it represents the assumption that consumers will visit the closest place offering the good.

In addition, the central place theory has three orders or principles. The first is the marketing principle and it is shown as  $K=3$  ( $K$  is a constant). In this system, market areas at a certain level of the central place hierarchy are three times bigger than the next lowest one. The different levels then follow a progression of threes, meaning that as one moves through the order of places, the number of the next level goes up three times. For example, when there are two cities, there would be six towns, 18 villages, and 54 hamlets.

There is also the transportation principle ( $K=4$ ) where areas in the central place hierarchy are four times bigger than the area in the next lowest order. Finally, the administrative principle ( $K=7$ ) is the last system and here, the variation between the lowest orders and highest orders increase by a factor of seven. Here, the highest order trade area completely covers that of the lowest order, meaning that market serves a larger area.

### **Losch's Central Place Theory**

In 1954, German economist August Losch modified Christaller's central place theory because he believed it was too rigid. He thought that Christaller's model led to patterns where the distribution of goods and the accumulation of profits were based entirely on location. He instead focused on maximizing consumer welfare and creating an ideal consumer landscape where the need to travel for any good was minimized and profits were held level, not maximized to accrue extra.

### **Central Place Theory Today**

Though Losch's central place theory looks at the ideal environment for the consumer, both his and Christaller's ideas are essential to studying the location of retail in urban areas today. Often, small hamlets in rural areas do act as the central place for various small settlements because they are where people travel to buy their everyday goods

However, when they need to buy higher value goods such as cars and computers, they have to travel into the larger town or city -- which serves not only their small settlement but those around them as well. This model is shown all over the world, from rural areas of England to the United States' Midwest or Alaska with the many small communities that are served by larger towns, cities, and regional capitals.

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<http://geography.about.com/od/urbaneconomicgeography/a/centralplace.htm>