Using Location Quotients in Cluster Analysis

Location quotient (LQ) analysis help identify industry clusters. A cluster is identified if it has a relatively large share of employment in comparison with the nation. In focusing on a cluster, LQ analysis is valuable in drawing conclusions about a particular industry cluster, identify trends and respond to needs.

How are location quotients calculated?

Steps:

1. Calculate the percentage of local employment in a particular sector (manufacturing a major sector using a 2 digit code, using a 3 or 4 digit code will measure specific types of manufacturing activities)
2. Calculate the percentage of national employment in that same sector.
3. Divide the percentage of local employment by the percentage of national employment in the same sector.

Equation: Location Quotient = $\dfrac{\text{\% of local employment in sector x}}{\text{\% of national employment in sector x}}$

How is the location quotient interpreted?

Location quotients provide information for two important economic conditions. A location quotient greater than one (1) indicates the sector is an export activity and is an important link to the outside economy. The location quotient needs to exceed 1.25 before it represents much export activity.   If the sector exceeds 1.25, it can also be defined as an industry cluster.   The second value is a location quotient less than one (1), particularly .75 or less. This suggests that the particular sector is not meeting local needs and that there may be a gap in the local economy.

Why are location quotients important in Cluster analysis?

One of our goals in analyzing data when doing a cluster analysis is to identify economic opportunities. For example, if a community has a strong manufacturing sector (the quotient for manufacturing in Van Wert County is 2.4, indicating a strong concentration of manufacturing jobs) then a focus of the cluster analysis should be on the manufacturing sector, how well it is doing in terms of job retention and expansion and what the future holds. Shining a spotlight on a particular sector because of its dominance in the economy, can lead to identifying value added opportunities or ways to assist the sector to maintain and/or expand it's presence in the community.

What are your community's sector strengths? Is it manufacturing? Service?

Calculate location quotients for your own industry clusters. Find employment numbers by industry at County Business Patterns, www.census.gov/econ/cbp/index.html, or cluster and community analysis tools available at www.statsamerica.org, an EDA website.

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