Trade Area Analysis

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Outline

- Trade area analysis
  - Trade area capture
  - Pull factor
  - Potential sales
  - Sales per square foot
- Trade area analysis example
- Business development & Assistance strategies

Trade Area Analysis Overview

- Agribusinesses do not always have access to primary data
  - Primary data: data collected by the researcher for a specific purpose
  - Secondary data: data collected by another source that can be used by the researcher for his/her own purpose
- Secondary data can be used to conduct useful economic analysis
  - Local, regional, national economic data

Trade Area Analysis

- Trade area analysis uses 2 measures:
  - Trade area capture
    - Surrogate estimate for number of customers who purchase a type of merchandise in an area
      - Both residents and nonresidents
  - Pull factor
    - Estimates the proportion of customers a region (i.e. county) draws from outside it's borders

Trade Area Capture

- Estimates customers or customer equivalents who purchase a specific merchandise in a given region
- Most trade area models assume a community's market area is solely a function of population and distance
  - Trade area capture incorporates income and expenditure factors, which also affect community's trade area
- Calculated by dividing county's actual commercial sector sales by state's per capita expenditures
  - Adjusted by relative per capita income between county and state

Trade Area Capture

- Trade area capture for retail sector *j* in county *i* (TAC_{ij}) is estimated as:

$$TAC_{ij} = \frac{AS_{ij}}{(AS_{sj} / P_s) \times (Y_c / Y_s)}$$

- Where
  - *ASij* represents annual taxable retail sales for sector *j* in county *i*;
  - *ASsj* represents annual taxable retail sales for sector *j* for the state;
  - *Ps* is the state population;
  - *Yc* is county per capita income; and
  - *Ys* is state per capita income.

Trade Area Capture: Interpretation

- If TAC_{ij} > Population in county *i*:
  - County is capturing outside trade; or
  - Local residents have higher spending patterns than state average
- If TAC_{ij} < Population in county *i*:
  - County is losing potential trade; or
  - Local residents spend less than state average

Trade Area Capture: Comparisons

- Comparison of trade area capture
  - Between sectors in a county
    - Can be used to see which sectors are attracting or losing customers in the county
  - In one sector over time
    - Reveals information about trends within a sector
    - Dynamic changes

Pull Factor

- While trade area capture measures purchases of both residents and nonresidents, pull factor measure's county's drawing power
- Proportion of consumers that a county draws from outside it's borders

Pull Factor

- Pull factor is calculated as

$$PF_{ij} = \frac{TAC_{ij}}{POP_i}$$

- Where
  - PF_{ij} is the pull factor value for commercial sector *j* in county *I;*
  - TAC_{ij} is the trade area capture value for commercial sector *j* in county *i;*
  - POP_i is population in county *i*

Pull Factor: Interpretation

- $PF_{ij} < 1.0$
  - Indicates a retail sector opportunity
    - Assuming low pull factor is a result of residents shopping outside the county
- $PF_{ij} > 1.0$
  - Indicates county is drawing in residents of other counties to shop

Potential Sales

- Potential sales for a given sector in a given county can be estimated as

$$PS_{ij} = P_i \times SSPC_j \times \frac{PCI_i}{PCI_s}$$

- Where
  - PS_{ij} is potential sales for commercial sector *j* in county *i;*
  - P_i is population for county *i;*
  - $SSPC_j$ is state sales per capita for commercial sector *j;*
  - *PCIi* is per capita income for county *I;*
  - *PCIs* is per capita income for state *s*

Potential Sales: Interpretation

- Can compare estimates of potential sales for commercial sector *j* in county *i* to realized sales of commercial sector *j* in county *i*
  - Derive a value of captured or lost commercial sales for that sector and county

Demand for Square Footage

- Demand for square footage is calculated as:

$$PSQFT = \frac{PS_{ij}}{SSQFT_{ij}}$$

- Where
  - PS_{ij}= Potential sales for sector *j* in county *i*;
  - $SSQFT_{ij}$= Actual per square foot sales for sector *j* in county *i*

Demand for Square Footage: Interpretation

- An alternative approach to potential sales is demand for commercial sector square footage
- Can compare demand for commercial sector square footage with available commercial sector square footage
  - Provides local economic development practitioners information to formulate local commercial sector development targets

Trade Area Analysis Example: Trade Area Capture

- Mineral County, NV
- General Merchandise sector, 2005
- Figures for trade area capture estimation:
  - *ASij* (2005 taxable retail sales for General Merchandise sector in Mineral Co.*)=$1,011,060*
  - *ASsj* (annual taxable retail sales for General Merchandise sector for Nevada)=*$3,799,963,834*
  - *Ps* (Nevada population)=*2,412,301 people*
  - *Yc* (Mineral Co. per capita income)=*$26,363*
  - *Ys* (Nevada per capita income)=*$35,744*

Trade Area Analysis Example: Trade Area Capture

- The trade area equation becomes:

$$TAC = \frac{\$1,011,060}{\frac{\$3,799,963,834}{2,412,302} \times \frac{\$26,363}{\$35,744}}$$

$$TAC = 870$$

- Trade area capture for Mineral County was 870 customer equivalents in the General Merchandise sector

Trade Area Analysis Example: Trade Area Capture

- Trade area capture was 870, while county population was 4,896
  - Mineral County is not capturing the general merchandising purchases of its residents
  - Implies that on balance, general merchandising outfits in Mineral Co. are not capturing local customers to their full extent

Trade Area Analysis Example: Pull Factor

- Figures for pull factor estimation:
  - TAC=870
  - Population=4,896

$$PF = \frac{870}{4,896}$$

$$PF = 0.1777$$

Trade Area Analysis Example: Pull Factor

- The pull factor estimate for Mineral County for General Merchandising in 2005 is less than 1
  - Mineral County is losing local sales
  - Potential opportunity for general merchandising development
    - But also indicates that there is difficulty in developing a target commercial sector program

Trade Area Analysis Example: Potential Sales

- Figures for Potential Sales:
  - P_i (population for Mineral Co.)=4,896
  - $SSPC_j$ (state sales per capita for General Merchandising sector)= $\frac{\$3,799,963,834}{2,421,301}$
  - *PCIi* (per capita income for Mineral Co.)=$26,363
  - *PCIs* (per capita income for Nevada)=$35,744

Trade Area Analysis Example: Potential Sales

- The equation becomes:

$$PS = (4,896) \times \left(\frac{\$3,799,963,834}{2,421,301} \right) \times \left(\frac{\$26,363}{\$35,744} \right)$$

$$PS = \$5,688,281$$

- The potential sales are considerably greater than the actual sales of $1,011,060

Trade Area Analysis Example: Demand for Square Footage

- Figures for Demand for Square Footage:
  - PS_{ij} (potential sales for General Merchandising sector in Mineral Co.)= *$5,688,281*
  - $SSQFT_{ij}$ (actual per square foot General Merchandising sales for Mineral Co.*)=$176.18/sqft*

Trade Area Analysis Example: Demand for Square Footage

- The equation becomes:

$$PSQFT = \frac{\$5,688,281}{\$176.18}$$

$$PSQFT = 32,287\ ft^2$$

- Therefore, Mineral County's total demand of commercial square footage for the General Merchandising Sector is 32,287 square feet

Trade Area Analysis Example: Demand for Square Footage

- Local economic development practitioners can estimate the general merchandising sector square footage already in use along with square footage currently available to:
  - Determine if enough space is available to target this sector for development
  - Determine if a shortage of commercial space/square footage will create a hindrance in targeting this sector for future economic development
    - If square footage is available, this could provide impetus for targeting the General Merchandising Sector for economic development in Mineral County

Business Development/ Assistance Strategies

- Anchor business strategy
- Management assistance programs
- Incubator programs
- Other strategies

Anchor Business Strategy

- Single good or service is lure that attracts customers
  - In shopping centers, this business is referred to as the “anchor”
- Three types of businesses to consider:
  - Businesses that generate sales on their own (anchors)
  - Businesses that secure sales from nearby businesses (i.e. operating off the anchor)
  - Businesses whose sales are coincidental
    - Ice cream shop or t-shirt shop in mall
- A balance between these 3 types of businesses must be struck for an area to realize its trade potential

Management Assistance Programs

- Business owners often need additional education/training in business management skills
  - Ex. accounting, finance, planning, marketing, customer relations, merchandising, personnel management, and tax procedures
- Potential sources of assistance include:
  - Small Business Development Center Program
  - Vocational technical centers,
  - Service Corps of Retired Executives (SCORE)
  - Cooperative Extension Service

Incubator Programs

- An incubator is a building with shared space or service requirements
  - Helps to reduce start-up costs for new businesses
- Successful incubator must have
  - Long-range planning
  - Specific goals
  - Good management
    - Identify markets
    - Identify entrepreneurs

Other Assistance Strategies

- Small businesses often have difficulty obtaining long-term bank financing for expansion because they:
  - Lack asset to mortgage;
  - Cannot obtain affordable terms or rates;
  - And/or cannot present a strong business plan.
- A business development program can identify public loan programs (such as Industrial Development Bonds) and
  - Package them with private loans to make projects feasible,
  - And/or provide assistance in undertaking joint projects for the business district

Other Assistance Strategies, cont.

- Joint business development projects may include:
  - Improving street appearance
  - Improving management of a commercial area
  - Building renovation
  - Preparation of design standards
  - Joint promotions and marketing
  - Organizing independent merchants
  - Special activities and events
  - Fund raising
  - Improving customer relations
  - Uniform hours of operations

Conclusions

- Trade area analysis shows how businesses can use existing data to learn more about their business power
- Trade area analysis provides information about:
  - The number of customers in a county
  - A sector's pull factor in the region
  - Potential sales in an area
- This information can all be used to create a plan or strategy for agribusiness owners

Thank you!