A First Look: Predicting Market Demand for Food Retail using a Huff Analysis

TRF Policy Solutions, July 2012
Introduction

- CDFI Fund’s Capacity Building Initiative
  - Financing Healthy Food Options
    - Workshops
    - Technical Assistance – individual and group
    - Resource Bank
Today’s Webinar Topic

• Introduce the Huff analysis as a tool for CDFIs to evaluate potential store locations.

• Learn how the Huff analysis can interact with Limited Supermarket Access (LSA) data.

• Review how CDFIs can access TA for a Huff analysis.
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TRF and Supermarkets

We are a national leader in financing stores that provide quality fresh food at competitive prices in low income communities.

TRF is a CDFI that works to reduce inequitable access to healthy foods by:

• **Underwriting loans and providing grants** to support viable supermarket and other food access related projects.
• **Advocating** to increase awareness on food accessibility issues.
• **Conducting policy research work** related to supermarket development, food systems, free and reduced price meal programs.
• **Providing technical assistance services** to CDFIs, CDCs and foundations to design and measure intervention strategies.
Healthy Food Access Research

TRF studies a range of issues related to improving access to healthier foods in distressed communities.

- Identify areas with inadequate access to supermarkets and quantify potential market viability: LSA areas
- Analyze market competition
- Examine the economic barrier to opening and operating supermarkets in distressed urban areas.
- Measure economic impact of new supermarket development on surrounding communities.
- Review existing programs designed to encourage people to eat and shop for healthier foods.
Overview of Webinar

- What is the Huff model?
- How can it help evaluate a potential store location?
- Why does the grocery store industry use this model?
- How is TRF using the Huff model to evaluate funding proposals?
- What is the required information for TRF to conduct a Huff Study?
The Challenge

- CDFIs have limited resources to invest in supermarket development - need to prioritize requests based upon some criteria.

- TRF estimates that 24.6 million people (or 8% of the US population) live in Limited Supermarket Access areas (LSAs).

- LSAs exist in all parts of the US with varied depth of need, as reflected in LSA access scores.

- Not all proposed locations are the same. Some sites and stores (based on size) will be more likely to serve people living in LSA areas.

**How to identify, evaluate and fund applicants most likely to increase food access?**
What is a Huff model?*

A way to calculate the probability that a resident of a given location (Census Block) will shop at a particular store based upon:

1) distance traveled to store on a road network
2) store square footage

Simply stated:

• The likelihood that a consumer will shop at a store goes down as the distance between residence and supermarket increases.

• The likelihood that a consumer will shop at a store goes up as the store’s square footage increases.

*Disclaimer: Some of this work is based on the work of Dr. David L. Huff, including one of his published articles currently found at http://www.jstor.org/stable/3144521; Prof. Huff does not participate in this work and does not endorse it.
What is a Huff model?

How can the Huff model assist in evaluating funding requests?

- The model estimates where people will come from to shop at the store.
- TRF can then use this to figure out who benefits by:
  - Summarizing population characteristics;
  - Evaluating against LSA access scores; and
  - Identifying overlap with federal program target areas (CDBG eligible or New Market Tax Credit areas).
Why does the Grocery Store Industry use Huff modeling?

• Most US grocers use Huff models to measure potential viability of new store locations.^^

• Probabilistic modeling captures the “dispersion in perceptions held by different consumers.”**

• The model is accepted industry-wide as effective for retail trade analysis.

• The Huff model has undergone 50 years of academic review, scholarly criticism, and refinement by researchers.<<


Why does the Grocery Store Industry use Huff modeling?

Understand competition and select placement of new store

Possible 16,000 sq ft new store
Why is TRF using Huff modeling?

• **For internal evaluation:** assess whether the loan/store is consistent with our program goals.

• **For external reporting:** demonstrate to funders that our program is serving/reaching residents in areas of inequitable access.
What can a Huff model reveal to me about a trade area when it is completed?

**Areas of likely shoppers**

**Residents with better access**
Why does TRF measure LSA Status and Access Scores with Huff?

Greater precision for lenders and operators on store’s likely consumers.
What can a Huff model reveal to me about the trade area when it is completed?

• Huff model combined with LSA analysis helps to identify **new store** locations that maximize impact in LSA area.

• “Tipping point/but for” analysis helps to identify **current store** locations already in place that are critical to fresh food access in LSA areas.
What can I learn from TRF analysis?

Characteristics of Huff model likely shoppers and data on area:

- Pop. weighted LSA score for area
- Existing markets in trade area (competition)
- Annual sales for each existing store
- Population estimates for likely shoppers
- Population estimates for likely shoppers that live in LSA area
- Percentage of population of shoppers that are LSA residents
- Projected grocery retail leakage captured
- Average population density (people/sq. mile)
- Average vehicles per household
- Location of transit access points
- Race, age and income characteristics of the area
- If the store is located in or reaches consumers who are in a CDBG, NMTC or USDA Food Desert
Huff Required Data: Supplied by CDFI

- Supermarket Project Address (include city, state, zip).
- Type: Existing store, renovation, expansion or new construction.
- Square Footage: Current and post-investment
- Description of the Project:

  **EXAMPLE:** Operator plans to close existing store at 2700 Girard Ave. (21,000 sq. ft. with 10,000 sq. ft. for food) and open a new store, at 2701 Girard Ave. (with 32,000 sq. ft. and 15,000 sq. ft. for food)
Huff Required Data: Supplied by the CDFI

- A definition of the CDFI’s eligibility criteria
- Parameters to evaluate the project against

TRF ACCESS ELIGIBILITY SECTION
To be eligible for funding, the applicant’s project must meet one of the criteria below:

- Is an existing store (replacement/expansion store) OR
- At least one-third (33.33%) of the population projected to be served by a store lives within a LSA area OR
- The population estimated LSA score for all block groups to be served by the store is greater than 30.

Example Criteria
Other evaluation questions to consider (beyond the Huff Model):

- Does the store expand or preserve the availability of healthy, fresh, high-quality unprepared and unprocessed foods, particularly fruits and vegetables?
- Does the project require funding to create an impact or to be competitive with similar projects in the region?
- Does the project promote neighborhood revitalization and community development?
- Will the project adopt or expand healthy food marketing activities?
Additional Resources
How to Apply for TA Related to the Huff Model

Eligibility for TA related to the Huff Model
• Certified CDFI
• Attended either a two-day training OR a TA webinar

Step 1:
• Email Christy Bare – cbare@opportunityfinance.net – with 2-3 sentences outlining the objectives of using the Huff analysis and identifying store location(s).

Step 2:
• OFN will obtain CDFI Fund approval for the request.

Step 3:
• TRF will contact the CDFI to complete an intake process.

Step 4:
• Upon completion of intake, Huff analysis will be completed within 2 weeks.
Financing Healthy Food Options Resource Bank

I. Training Curriculum
   - Food Systems Overview
   - Healthy Food Retail Financing
   - Financial Services for Mid-Tier Food Chain Enterprises
   - NMTC & Urban Supermarkets
   - Understanding the Grocery Industry
   - Underwriting Supermarkets & Grocery Stores
   - Mid-Tier Food Chain Enterprises Overview & Underwriting
   - Capitalizing Healthy Food Retail Initiatives
   - Identifying Optimal Areas for Supermarket Development
   - Understanding the Food Production Sector
   - Credit Skills for Lending to the Food Production Sector

II. Training Webinars

III. Additional Resources
   - Searching for Markets: The Geography of Inequitable Access to Healthy and Affordable Food
     - Executive Summary
     - Full Report
   - Financial Resources Catalogue

IV. Food Desert Mapping Tools
   - USDA Food Desert Locator
   - PolicyMap
Financing Healthy Food Options Webinar Archive

http://www.cdfifund.gov/what_we_do/FHFOResourceBankWebinars.asp
Upcoming TA Webinars

Developing Loan Policies and Procedures for Healthy Food Financing
   • Wednesday, August 15, 2pm EDT

Underwriting Supermarkets: A Deeper Look at the Details of Financing Grocers
   • Wednesday, August 22, 2pm EDT

More to come in September, including:
   • Rural Grocery Stores
   • Healthy Corner Stores
   • Loan Application Review for Food Producers
   • And much more!

STAY TUNED!

Visit www.opportunityfinance.net/FHFOwebinars/ to register for one or all of the TA webinars
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