Trading Area Analysis

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Reilly's Law (2 of 2)

$$Dab = \frac{d}{1 + \sqrt{\frac{Pb}{Pa}}}$$

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Exercise: Reilly’s Law

Cities A and B are 50 miles apart. City A has a population of 400,000 and City B has a population of 100,000. According to Reilly's law, what is the point of indifference for City B?

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Calculation: Reilly's Law

$$Dab = \frac{50 \text{ miles}}{1 + \sqrt{\frac{100{,}000}{400{,}000}}}$$

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Point of indifference for City B = 16.7 miles

Exercise Solution: Reilly's Law

- $\text{Dab} = \frac{50}{1.5}$, i.e., 16.7 miles from smaller city and 33.3 miles from larger city Indifference point
- Assumes that larger city has more retail facilities and greater drawing power as a result
- Assumes that road conditions, congestion, driving conditions are equal in both cities

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Limitations of Reilly's Law

- Distance is only measured by major thoroughfares; some people will travel shorter distances along cross streets.
- Travel time does not reflect distance traveled. Many people are more concerned with time traveled than with distance.
- Actual distance may not correspond with perceptions of distance.

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Huff’s Law

Huff’s law of shopper attraction delineates trading-areas on the basis of product assortment at various shopping locations, travel times from the shopper’s home to alternative locations, and the sensitivity of the kind of shopping to travel time.

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Exercise: Huff's Law

Use Huff's law to compute the probability of consumers' traveling from their homes to each of three shopping areas: square footage of selling space—Location 1, 15,000; Location 2, 20,000; Location 3, 25,000; travel time—to Location 1, 15 minutes; to Location 2, 21 minutes; to Location 3, 25 minutes; effect of travel time on shopping trip—2

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Solution: Huff's Law

$$pil = \frac{(15{,}000)/(15)^2}{(15{,}000)/(15)^2 + (20{,}000)/(21)^2 + (25.000)/(25)^2} = 43.9\%$$

$$pil = \frac{(20{,}000)/(21)^2}{(15{,}000)/(15)^2 + (20{,}000)/(21)^2 + (25.000)/(25)^2} = 29.8\%$$

$$pil = \frac{(25{,}000)/(25)^2}{(15{,}000)/(15)^2 + (20{,}000)/(21)^2 + (25.000)/(25)^2} = 26.3\%$$

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- The probabilities of consumers, traveling to locations 1, 3, and are 43.9 percent, and 26.3percent, respectively.