DEPAUL UNIVERSITY

Expanding the IR Toolkit to Answer Non-Traditional IR Questions for a New Dean

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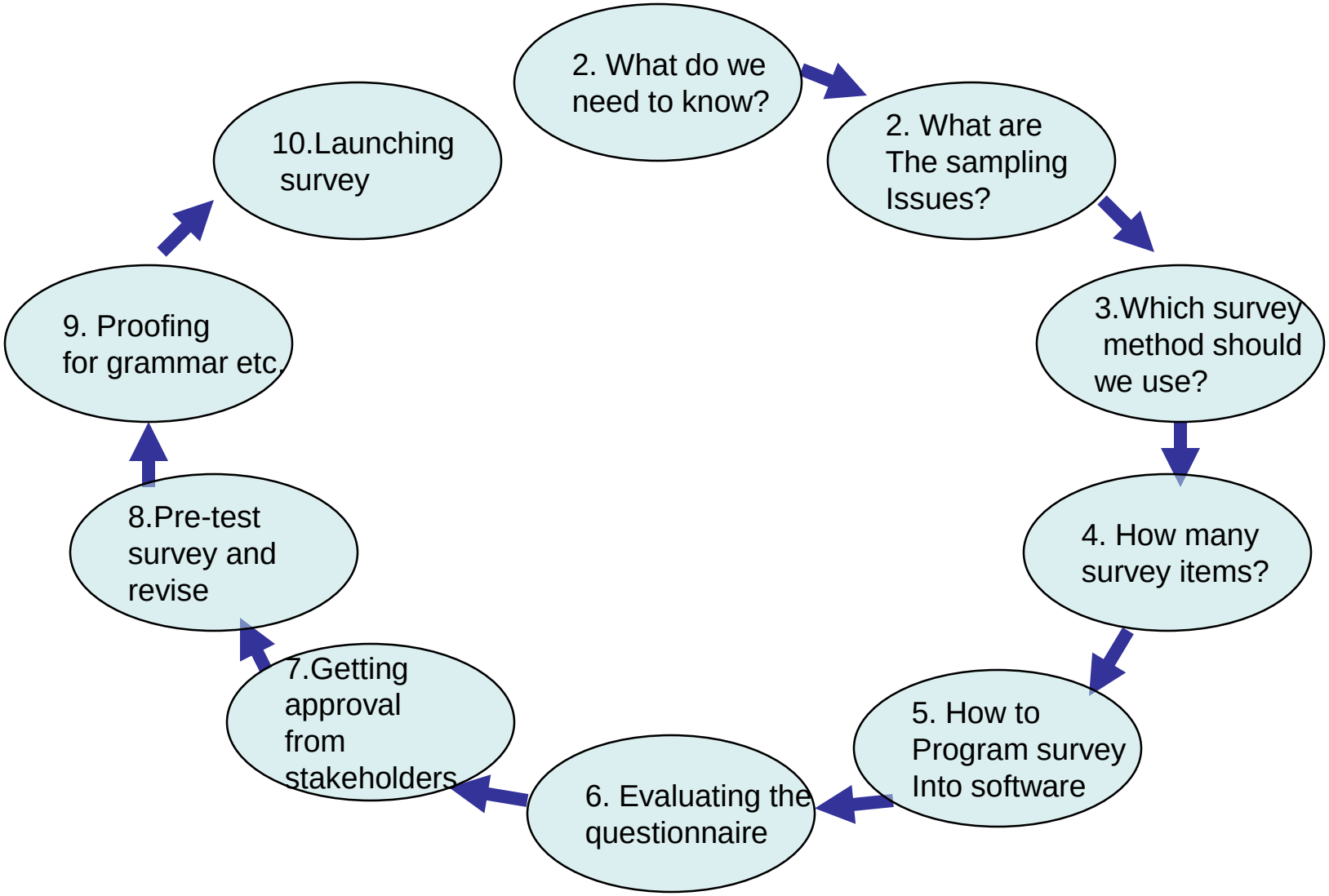
DePaul University

- Urban
- Catholic
- 25,000 + Enrollment
- Enrolls over 1,500 master's level teachers in School of Education
- Uses web-based survey research to inform strategic enrollment management process

Finding Marketing Opportunities

- Why is this information being sought?
- Who will use this information?
- What decisions might be made as a result of gaining this information?
- Can all stakeholders agree on prioritizing the questions to be answered?
- Is it likely that we can find a research method that will successfully capture the information we need?
- Does the information already exist?
- Can we really answer the questions?

The Survey Research Process



1.What do we need to know?

Avoid “nice to know” information

- Question: Is course location more important than cost, brand, and time-to-completion when teachers choose a graduate school from a select set of competitors?

- Other objectives:
  - To obtain a better understanding of DePaul’s current positioning in the graduate education market
  - To determine the market attribute ‘drivers’ that influence the perceptions and preferences of teachers at the largest school districts within a 30-mile radius of DePaul
  - Provide attribute level utility scores (or level of importance for each attribute that is measured)

2. What are the sampling issues?

Where can we get this information?

– What we wanted:

- Random sample of teachers at the largest districts (based on teachers, not number of enrolled students in district)
- Random sample to include public schools and private schools within a 30-mile radius of DePaul
- A list of 10,000 teachers at-work email addresses from list vendor

3.Which survey Method should we use?

How can we generate the data necessary to accomplish the objectives?

- **Budget, objectives etc. all led to a two-part web-based survey. Part I tells us about preferences and provides demographic information about the survey participants:**

- Of the professional development opportunities listed below, which one will you be considering next
- What subject (area)s do you plan to study?
- In the past 12 months, have you inquired about, applied or been admitted to, or enrolled in an education program at any of the following universities?
- What is your preferred location of instruction? (distance from home vs. internet)
- What is your preferred mode of learning? (traditional classroom, internet etc.)
- What is your overall preference for attending these universities?
- How important are the following to you when choosing a college or university for continuing your education?
- Please list the name and district of the school where you are employed or indicate if you are not employed
- What is your ethnic background?
- Please list your home zip code.
- Please list your work zip code.
- Have you ever completed one or more courses from these institutions?

4. How many Survey items?

Identify attributes and layers to satisfy conjoint measurement and answer "Is course location more important than cost, brand, and time-to-completion when teachers choose a graduate school from a select set of competitors?"

1. Brand
   - School A
   - School B
   - School C
   - School D
   - School E
2. Location
   - 15 minutes from home or work
   - 30 minutes from home or work
   - 45 minutes from home or work
   - On-site
   - Internet based
3. Net cost
   - $1400
   - $1500
   - $1800
   - $2000
   - $2100
4. Time to completion
   - Least
   - Average
   - Most

5. How to program survey into software

Code attributes and layers into the software

If you had to decide on one of these universities to attend to further your education (endorsements, certifications, degrees, or individual courses), which would you choose? Each university below represents a hypothetical combination of cost, location, and time, to completion.				
Institution	School A	School B	School C	NONE
Net cost per course	$1400	$2100	$1800	
Location/Method of delivery	15 minutes from work or home	45 minutes from work or home	On-site within district	
Time to completion	Least time	Average time	Most time	
	○	○	○	○

6. Evaluate the questionnaire

Step back and critically evaluate

- Are the questions necessary?
- Will the questions provide answers to the objectives?
- Is the email introduction concise – does it encourage participation in the survey and clearly offer the incentive?
- Be sure definitions are included for any terms that need explanation (net-cost per course)
- Can the survey be simplified?
- Does it seem too long?

7. Getting approval from stakeholders

Getting final buy-in increases chances that users will take the next step after receiving results

- Assistant Vice-president of Graduate and Adult Recruitment
- Director of Marketing Strategy
- Director of Graduate Admissions

8. Pre-test survey and revise

Pretest and revise

- Pilot test
  - 16 teachers provided feedback for online survey:
    - Lack of continuity?
    - Length of survey?
    - General respondent reactions?

9. Proofing for grammar etc

Prepare final survey copy

- Don’t overlook the possibility of catastrophic errors in the CBC survey
- Proofread very carefully!
- Error in a question from Part I wouldn’t invalidate entire survey, but error in trade-off analysis could invalidate all of Part II

10. Launching survey

Final Steps

- List provider sends 10,000 teachers at-work email addresses to a third party vendor who invites the teachers to participate in the survey. Using a third-party vendor allows the survey to be administered blind, so participants do not know who is sponsoring the study.

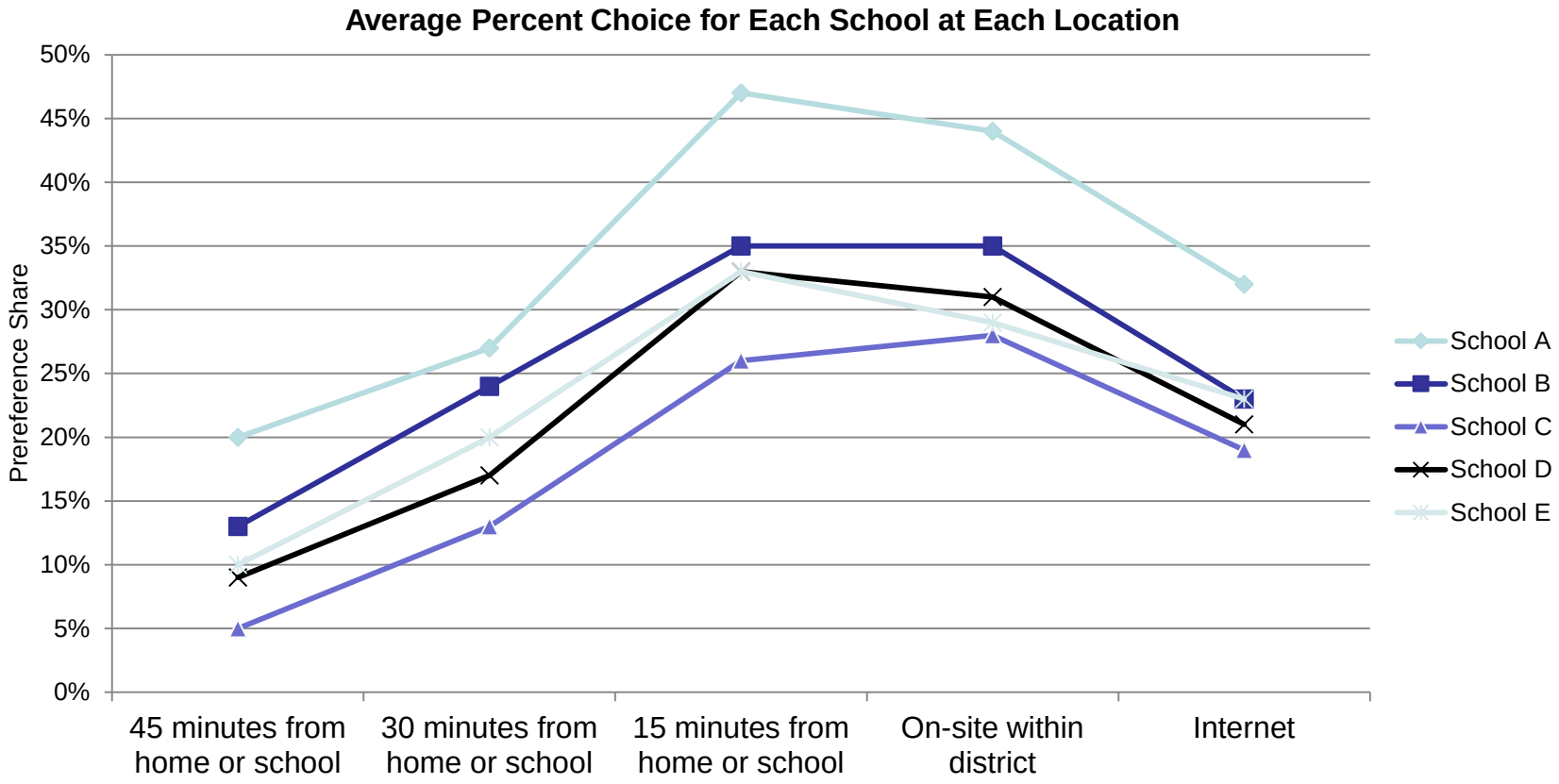
- Raw data is captured as a function of the software that is generated from the web application

- Data is pulled into desktop software for further processing

- Application developer prepares the data before giving it to the analyst for input into analysis software

Results: A Four-part Analysis

Part 1: Interaction Between Location and Brand


Average Percent Choice for Each School at Each Location
Prereference Share
50%
45%
40%
35%
30%
25%
20%
15%
10%
5%
0%
45 minutes from home or school
30 minutes from home or school
15 minutes from home or school
On-site within district
Internet
School A
School B
School C
School D
School E

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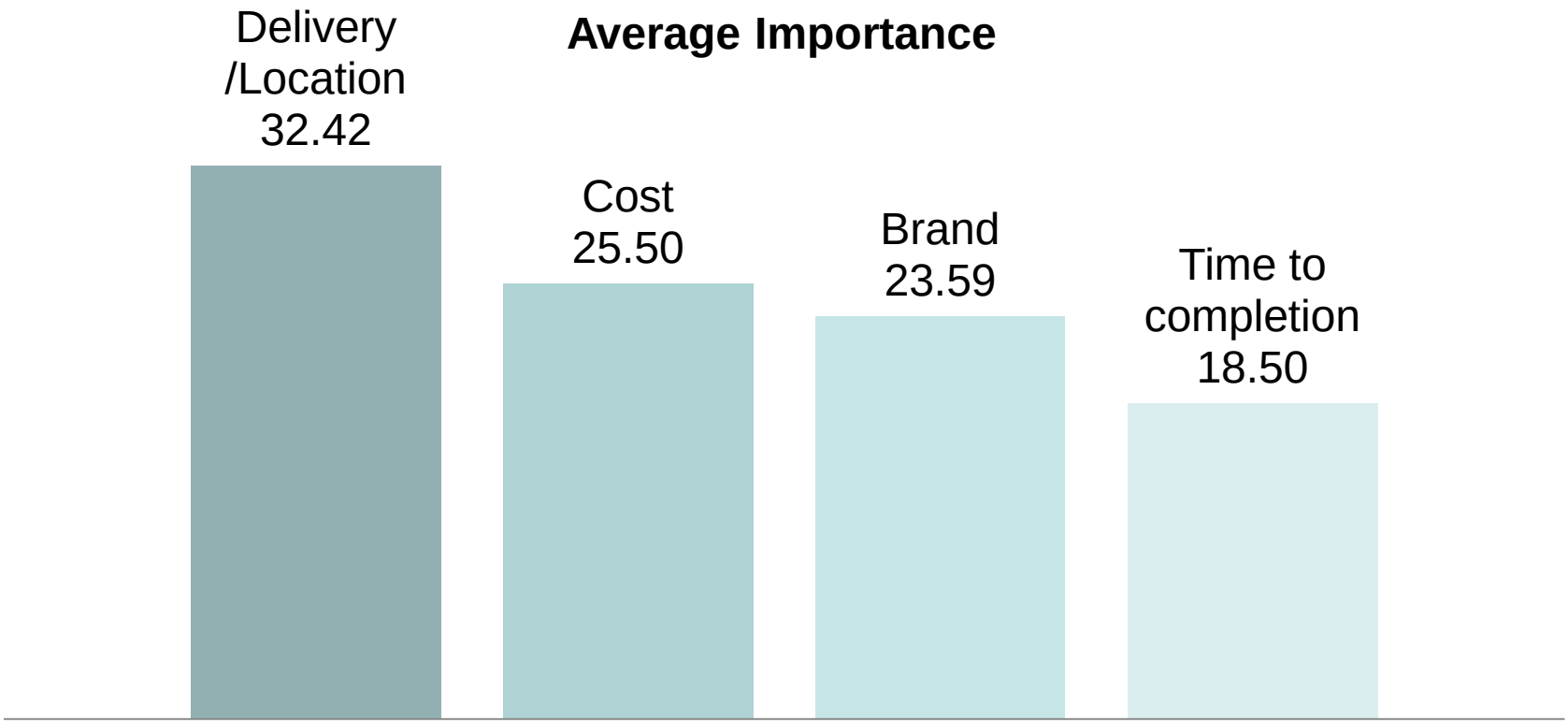
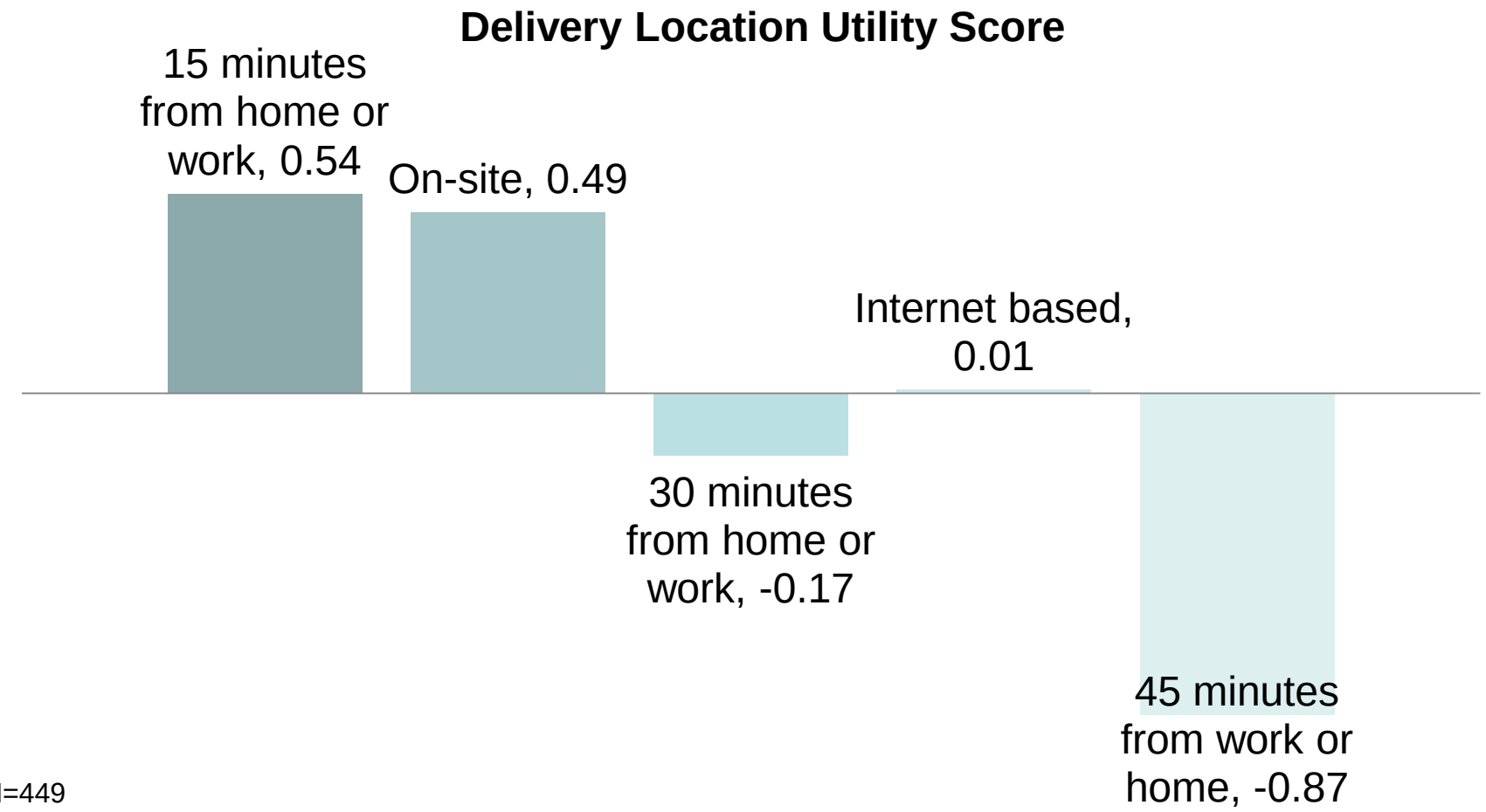
Part II: Average Importances


Average Importance
Delivery /Location 32.42
Cost 25.50
Brand 23.59
Time to completion 18.50

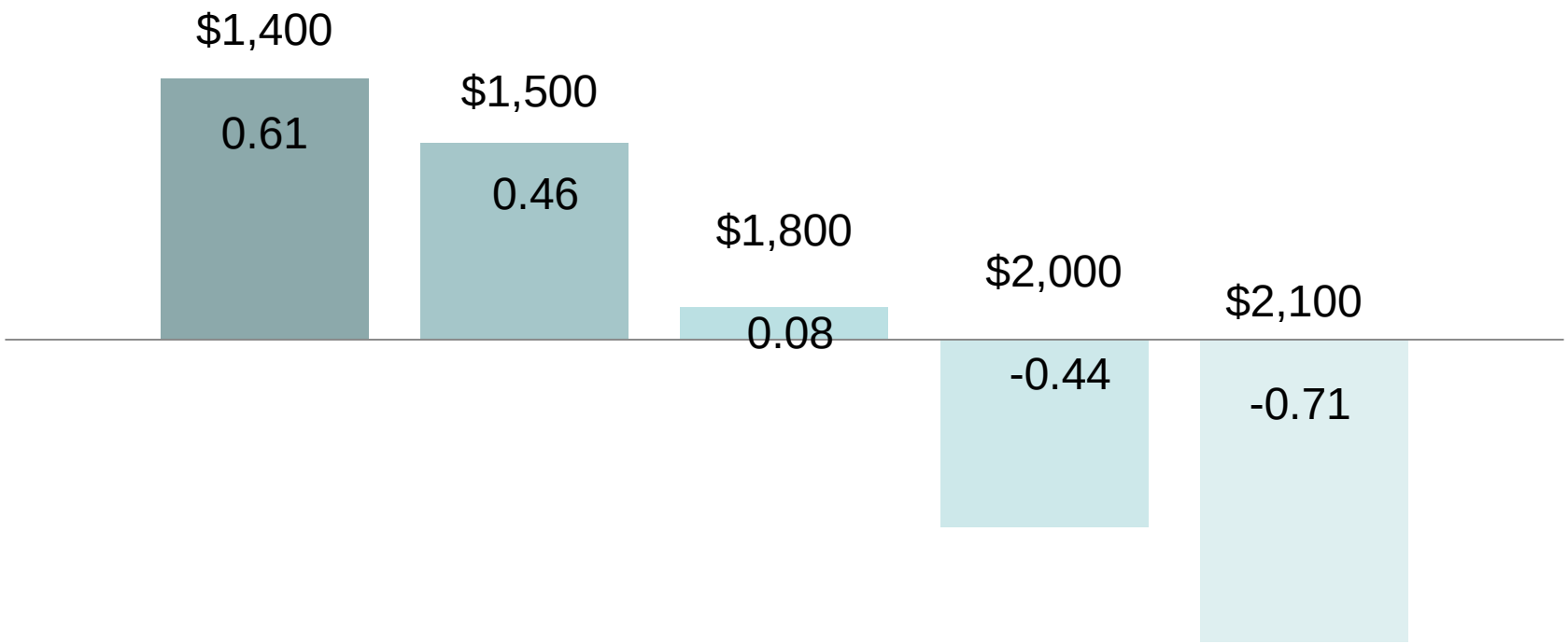
N=449

Part III: Utility Scores


Delivery Location Utility Score
15 minutes from home or work, 0.54
On-site, 0.49
Internet based, 0.01
30 minutes from home or work, -0.17
45 minutes from work or home, -0.87

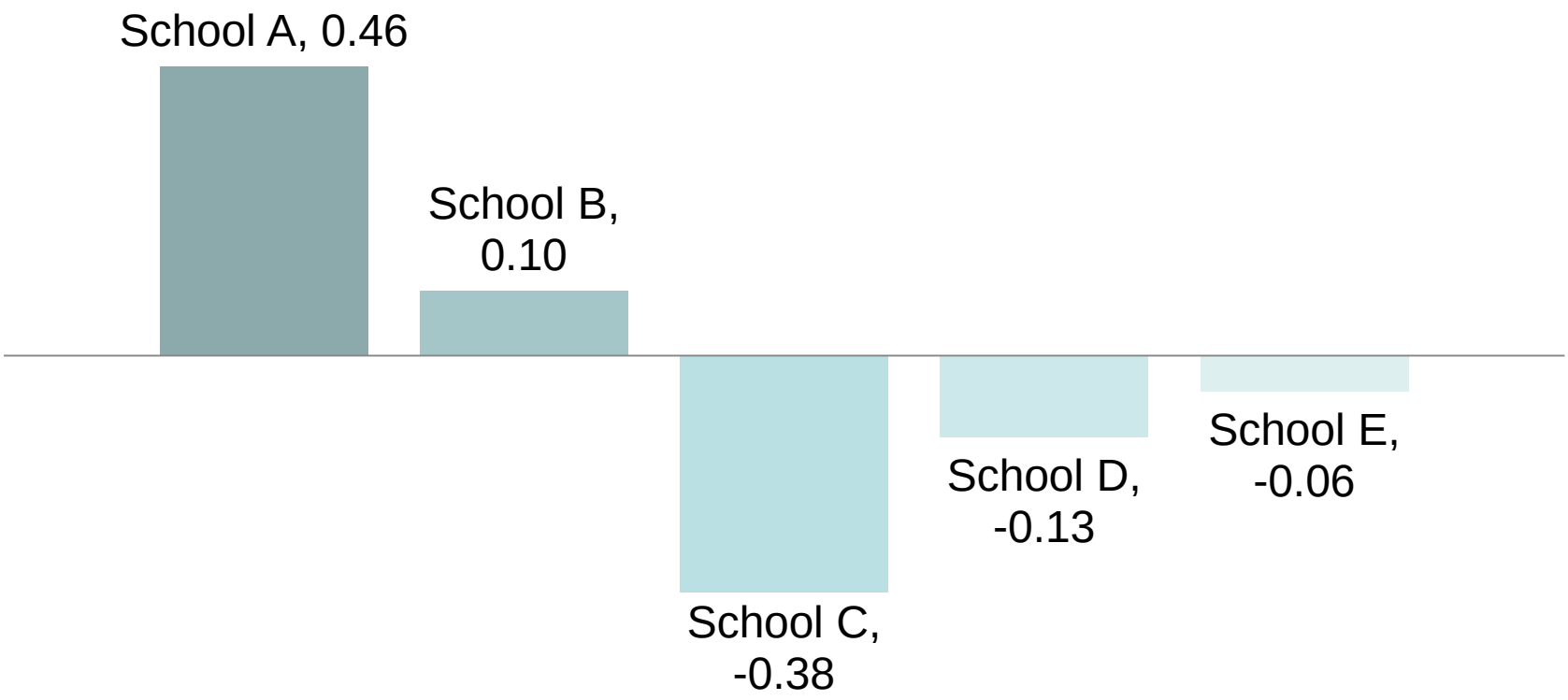
N=449

Cost per Course Utility Score



N=449

Brand Utility Score



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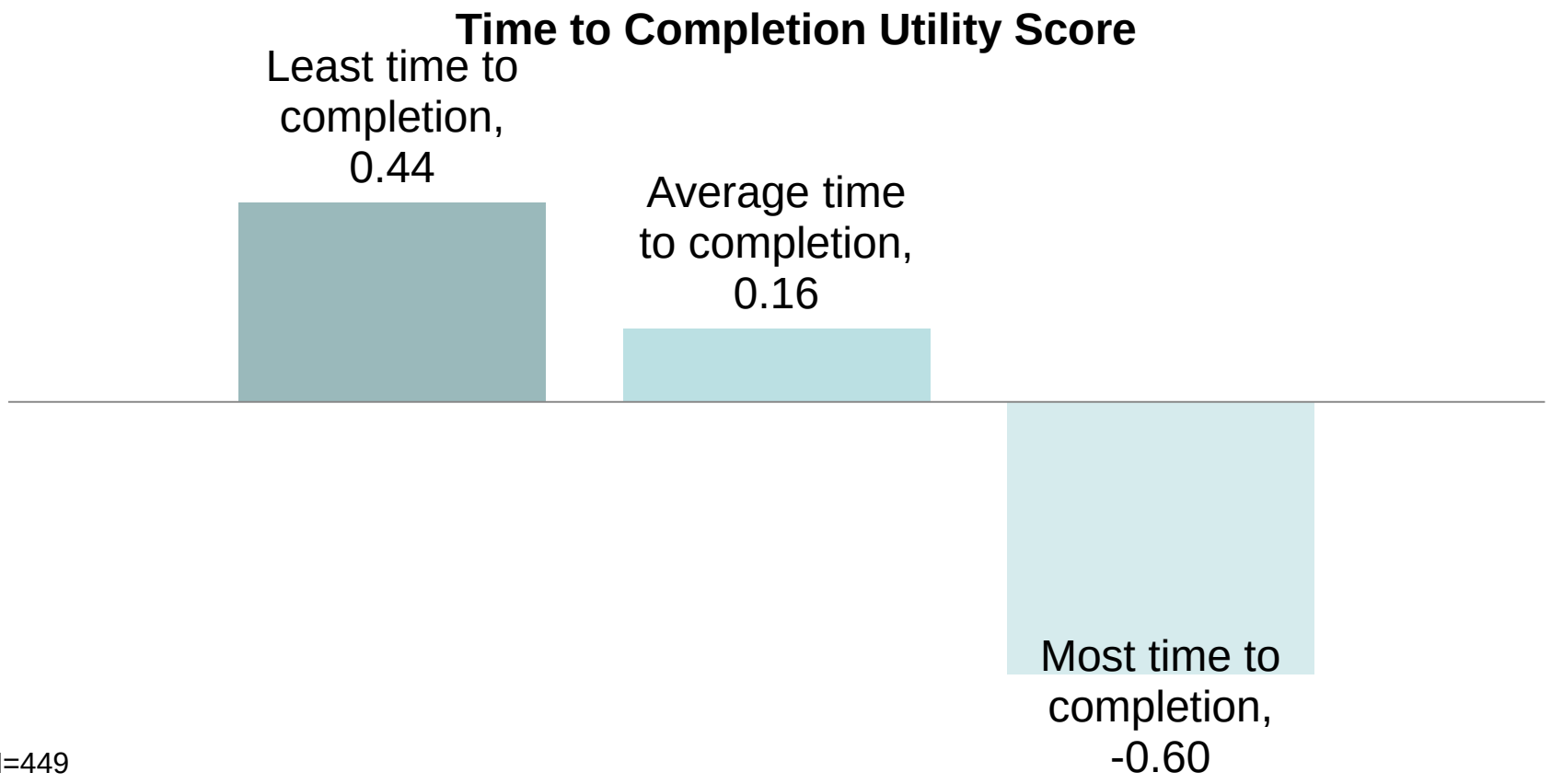
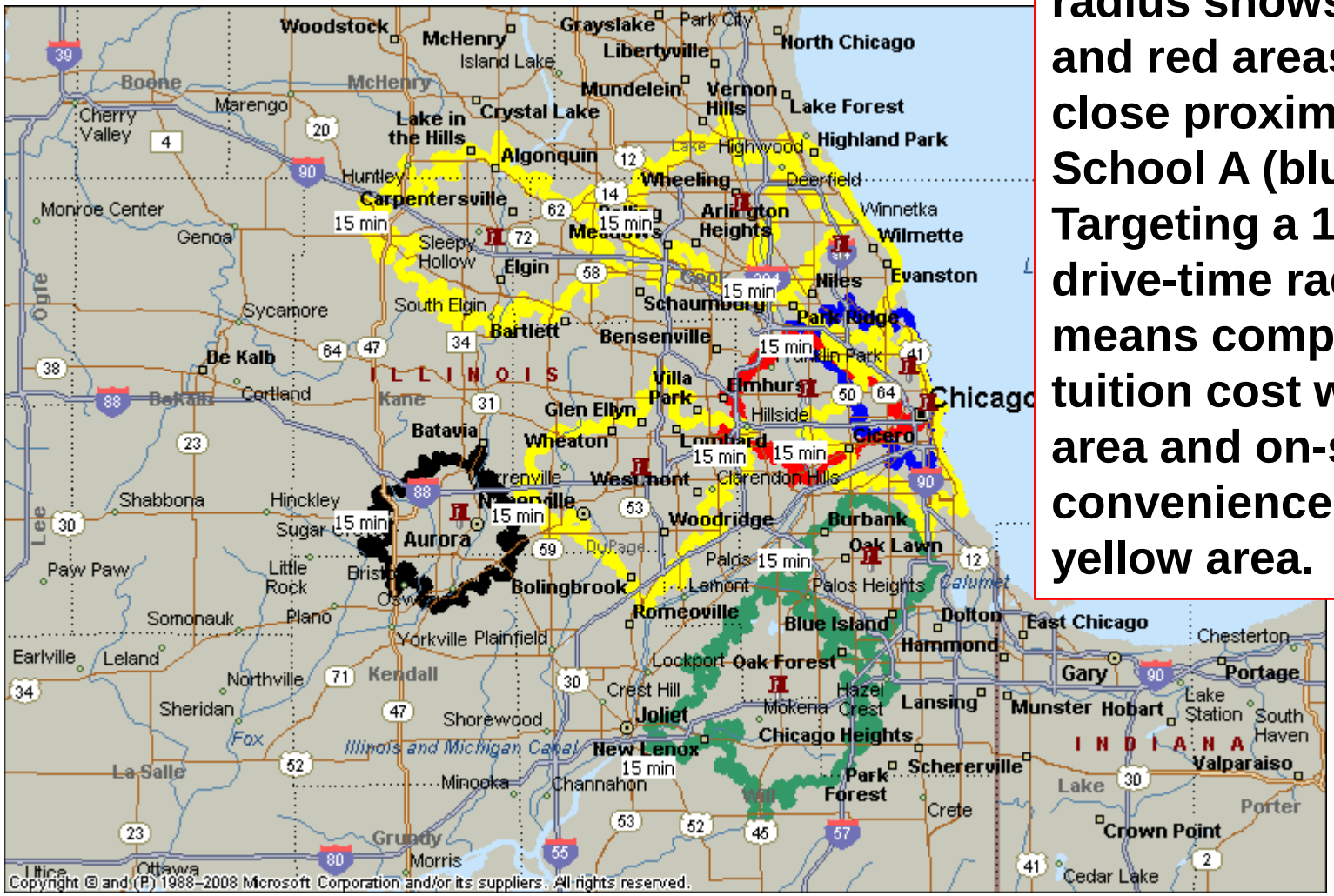

Time to Completion Utility Score
Least time to completion, 0.44
Average time to completion, 0.16
Most time to completion, -0.60

N=449

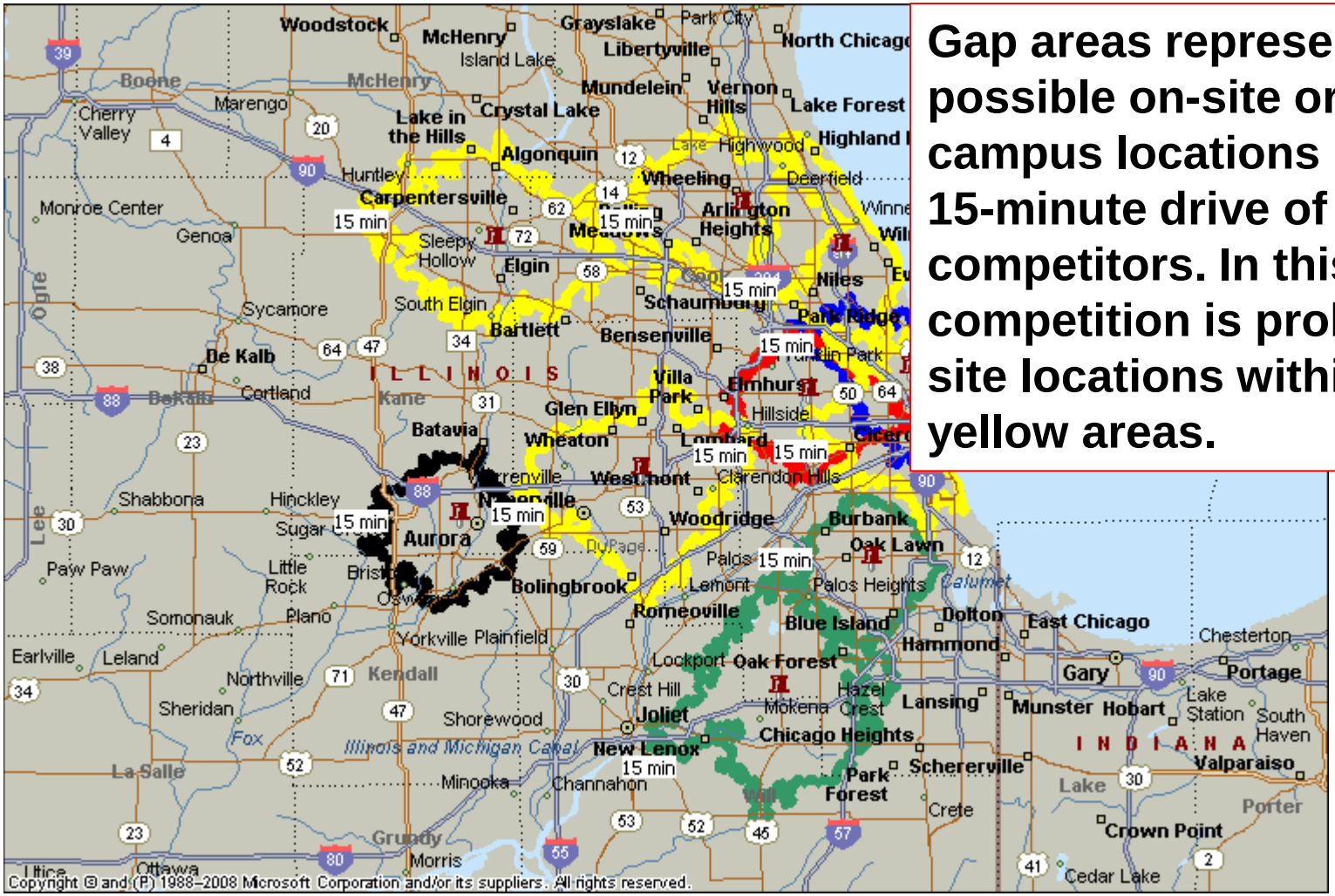
Part IV: Market Simulation

The software allows us to do market simulations. We can look at market preference, for example, if our classes were located within 15 minutes of home or work. Our share is high, but is this realistic based on multiple locations of these select competitors?

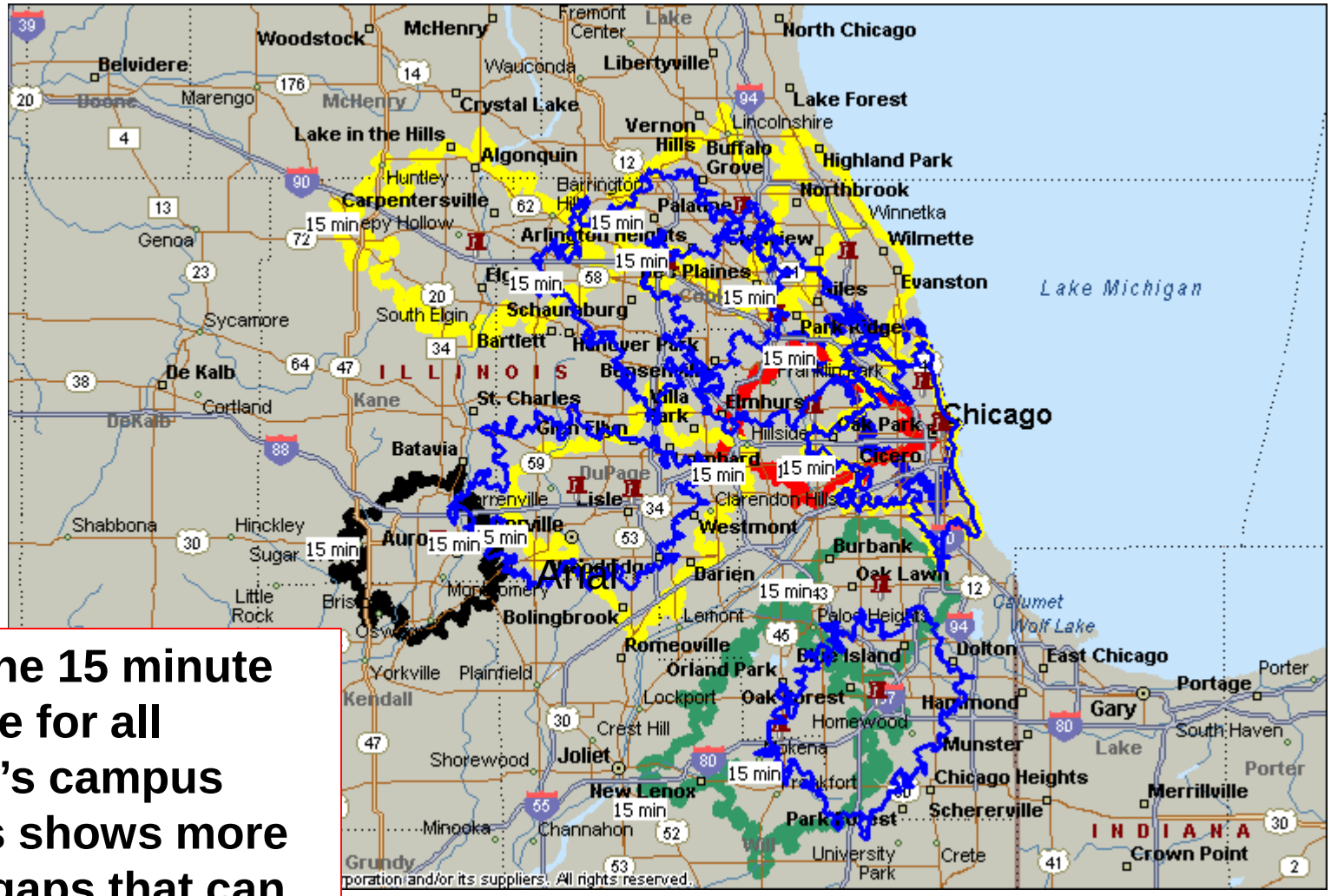
	Cost per Class	Location	Time to Completion	Market preference
School A	$2000	15-min	Average	39.65
School B	$2100	On-site	Average	12.76
School C	$1800	45-min	Average	03.66
School D	$1400	30-min	Average	37.21
School E	$1500	45-min	Average	06.71



15-minute drive-time radius shows yellow and red areas to be in close proximity of School A (blue). Targeting a 15-minute drive-time radius means competing with tuition cost within red area and on-site convenience within yellow area.



Gap areas represent possible on-site or off-campus locations not within 15-minute drive of major competitors. In this area, the competition is probably on-site locations within the yellow areas.



Adding the 15 minute drive-time for all School A's campus locations shows more specific gaps that can be filled by suburban campus locations.

Limitations

- Construction of net cost attribute and its levels was difficult because, anecdotally, it is known that many schools offer cohort discounts for master's in Education programs. Because the exact level of discount is not known and tuition is fixed at School A, the net cost reflects School A's full tuition and a 20% discount was applied to other schools.
- A low response rate (not uncommon for web-based data collection) could potentially limit the inferences about the total populations based on the responses of teachers sampled.
- Competitor on-site locations, which are varied and many, are not included in the analysis
- Education level or years of teaching are not included
- Respondents were self-selected
- Simulation analyses are not exact and are to be used as a guide or point of reference

Top Takeaways

- The trade-off analysis indicated delivery/location of classes has the greatest value to teachers, followed by cost, brand, and time to completion.

- The trade-off analysis indicated delivery/location of classes has the highest value when the drive time is 15-minutes from home or work (Part I indicated preferred location is on-campus near home.)

- The simulation analysis, as part of the trade-off analysis, shows there is an opportunity to potentially increase market preference by offering classes that are not located within a15-minute drive-time radius of the competitor schools.

Discussion

THANK YOU!
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Appendix

Respondent Profile

- 575 completed or partially completed surveys for Part I
- 449 completed surveys for Part II
- Ethnicity
  - Caucasian 91.7%
  - African American 2.3%
  - Hispanic 2.8%
  - Asian 1.9%
  - Native American .2%
  - Multi-racial 1.1%

Reference – What is a conjoint analysis?

- Conjoint analysis is the original trade-off approach and uses linear models. There is metric conjoint, where respondents monadically rate various product configurations, and non-metric conjoint, where respondents rank a set of product configurations. There are also full-profile conjoint, partial-profile conjoint and pairwise conjoint. Full-profile conjoint uses all product features in every product configuration. Partial profile conjoint uses a smaller subset of available product features in the product configurations. Pairwise conjoint requires the respondent to rate their preference for one product over another in a paired comparison. We will only discuss conjoint methods in general in this paper.
- Conjoint models are simply regression models which are constructed for each individual respondent. Typically, each respondent rates or ranks 20 to 30 product configurations. Each product configuration contains different levels of the product attributes being tested. If the product levels are varied appropriately (the role of experimental design), a regression model can be estimated for each individual, using the product ratings as cases. The coefficients from the model are the utilities or utils.
- A conjoint approach should be used if a limited number of attributes needs to be tested and utilities need to be estimated for individual respondents, e.g., conjoint-based segmentation.

Source: Sawtooth Software

Hierarchical Bayes as part of a CBC analysis

- Creating individual-level utilities for each respondent
  - Detect segments that disagree and target them separately
  - Build accurate what-if simulators that are sensitive to different preferences
  - Instead of estimating each respondent's utilities individually, the algorithm estimates how different the respondent's utilities are from the other respondents in the study
  - Series of iterations start with arbitrary made up averages then estimates what the individual utility scores would be assuming the sample averages were actually the starting point. After all individual preference scores have been calculated, the algorithm updates the sample average and repeats the process. Final results are calculated by taking the average of the saved sample averages and the average of the saved individual's utilities.
  - Two probabilities: 1) likelihood that a respondent will select a specific concept in a choice task given a specific set of utilities.2) probability that the respondent's utilities are consistent with the pattern of utilities observed with the rest of the respondents (sample density).
  - Assumes the respondent answers choice tasks according to a multinomial logit model. X

Source: Sawtooth Software