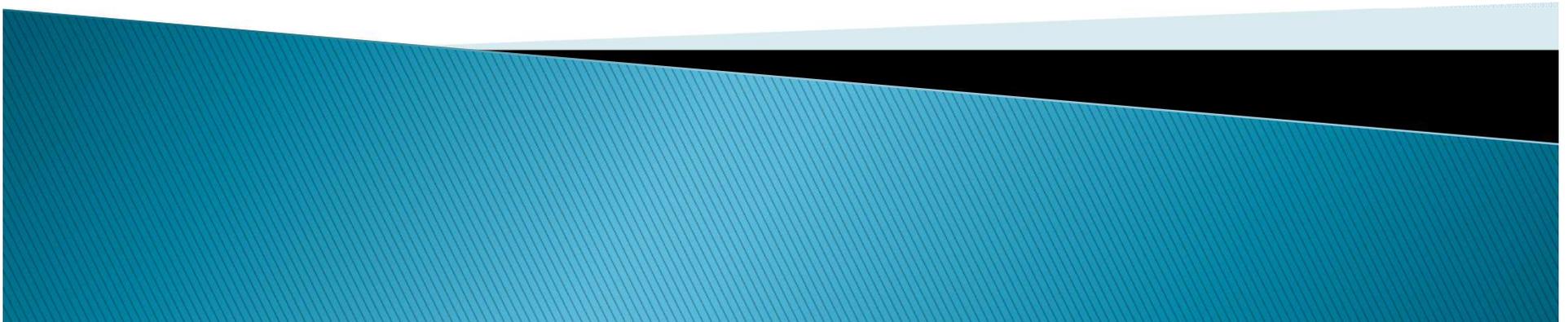


Analysis of the Off-Campus Housing Search for CMU Students

36-303 | Team E

ZhiJun (Z) Huang, Cen (Kayco) Zhou,
Jiaxi (Jessica) Cui, Terence Kwak, Emily Lee



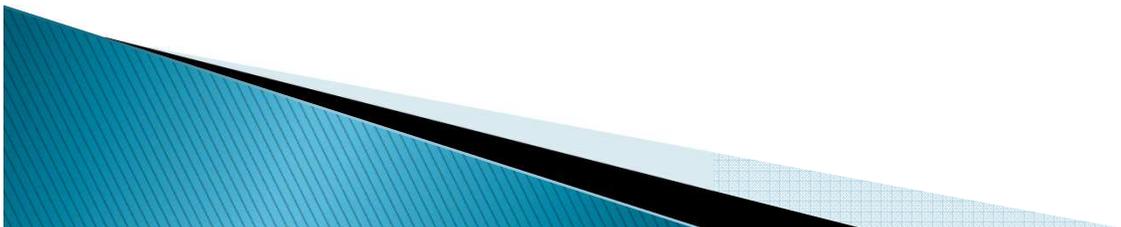
Agenda

- Intro
 - Research Question
 - Motivation
- Method
 - Questionnaire
 - Survey Setup
 - Sample
- Results
- Conclusion
 - Strengths and Weaknesses
 - Take Home Messages
 - Advice



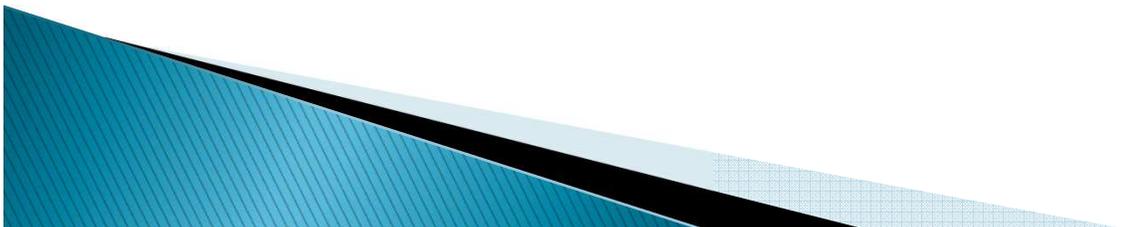
Research Question

- Research Question
 - What are the common platforms used in the search of off-campus housing?
 - What are your preferences for off-campus housing?
 - How satisfied are you with your searching experience?
 - Do you think this searching experience can be improved, if so, in what ways?



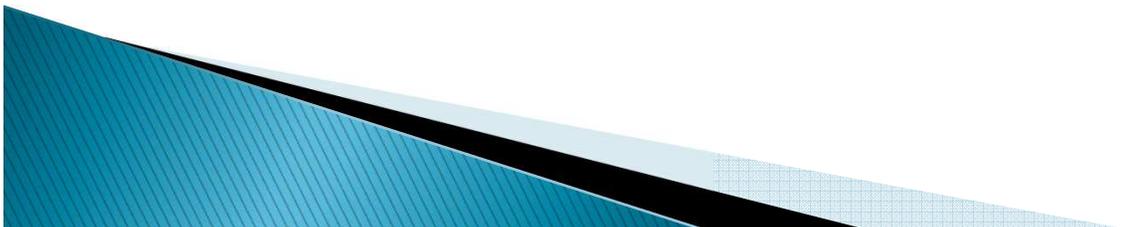
Motivation

- Motivation
 - Survey intended to identify the existing difficulty in the search process
 - Looking for possible ways to improve off-campus housing search process
 - Survey result will be of great interest for the community



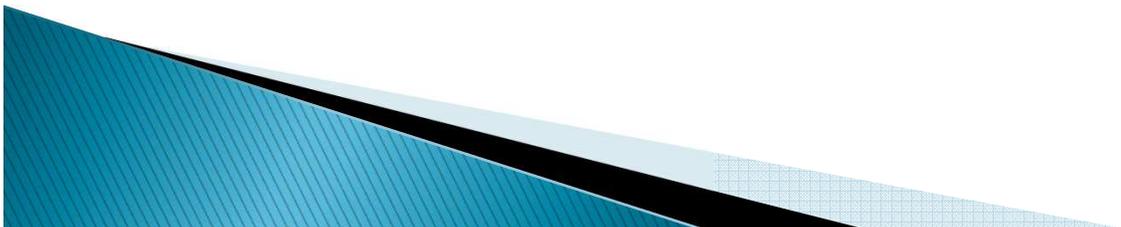
Questionnaire

- Part 0 : Resident Status
- Part 1 : General Information
- Part 2 : Identifying Difficulties in Off-Campus Housing Search
- Part 3 : Identifying Preferences in Off-Campus Housing Search



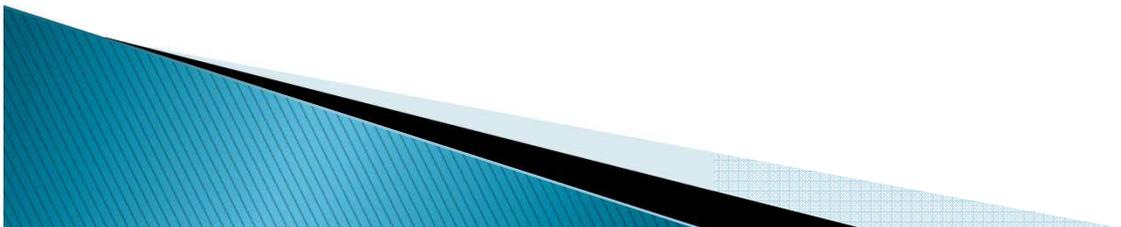
Survey Setup

- Survey posted on website
 - Promotional page with raffle details
- Emails
 - Email for preliminary information and selection
 - Email with the survey link
 - Studies have shown that this raises the response rate
 - Follow up email to be sent out in future



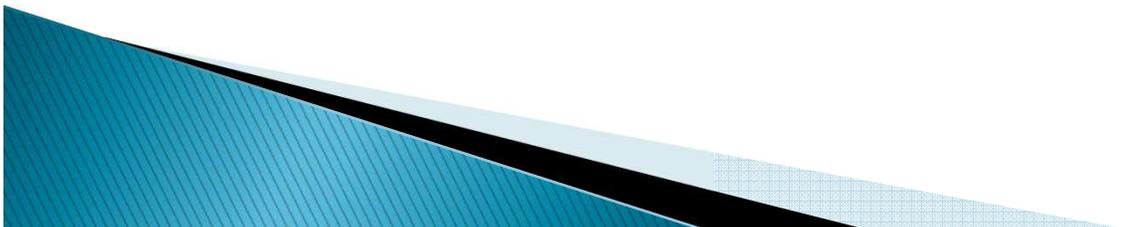
Sample Selection

- Sampling Frame: students from C-book
- Stratified SRS : Graduate and Undergraduate
- Randomly generate 1200 numbers each for undergraduate and graduate (page, column, row)
- Sample size of 737
 - 318 Graduate Students, 419 Undergraduate Students
- 23.0% response rate
 - Higher response rate from graduate students



Results: Graduate vs Undergraduate

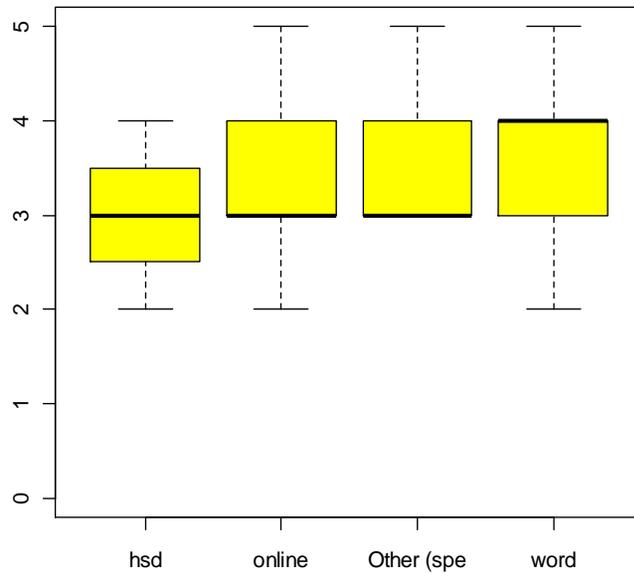
- Not weighted
- Primary variable of interest: **Satisfaction**
- Number of students who have searched for off-campus housing
 - Graduate: 77/82
 - Undergraduate: 45/88
- Both: Satisfaction vs. Platforms
- Graduate: Satisfaction vs. Attributes of platforms
- Undergraduate: Expectation vs. Reality



Results: Satisfaction vs Platforms

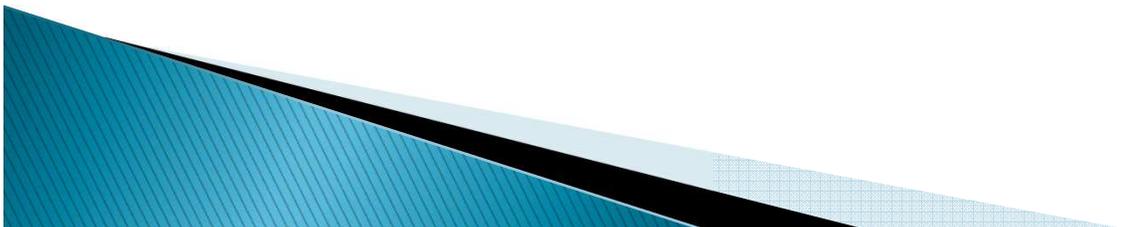
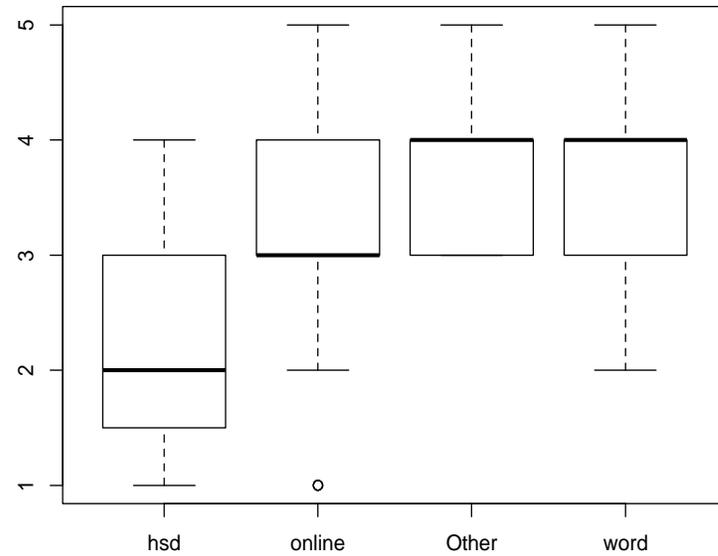
Undergraduate

Satisfaction by platforms



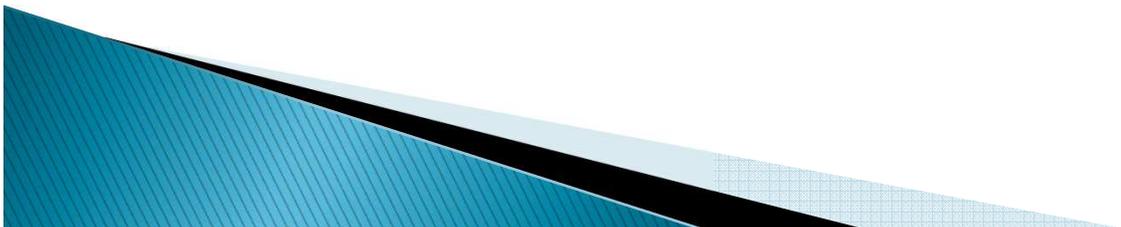
Graduate

Satisfaction by Platforms



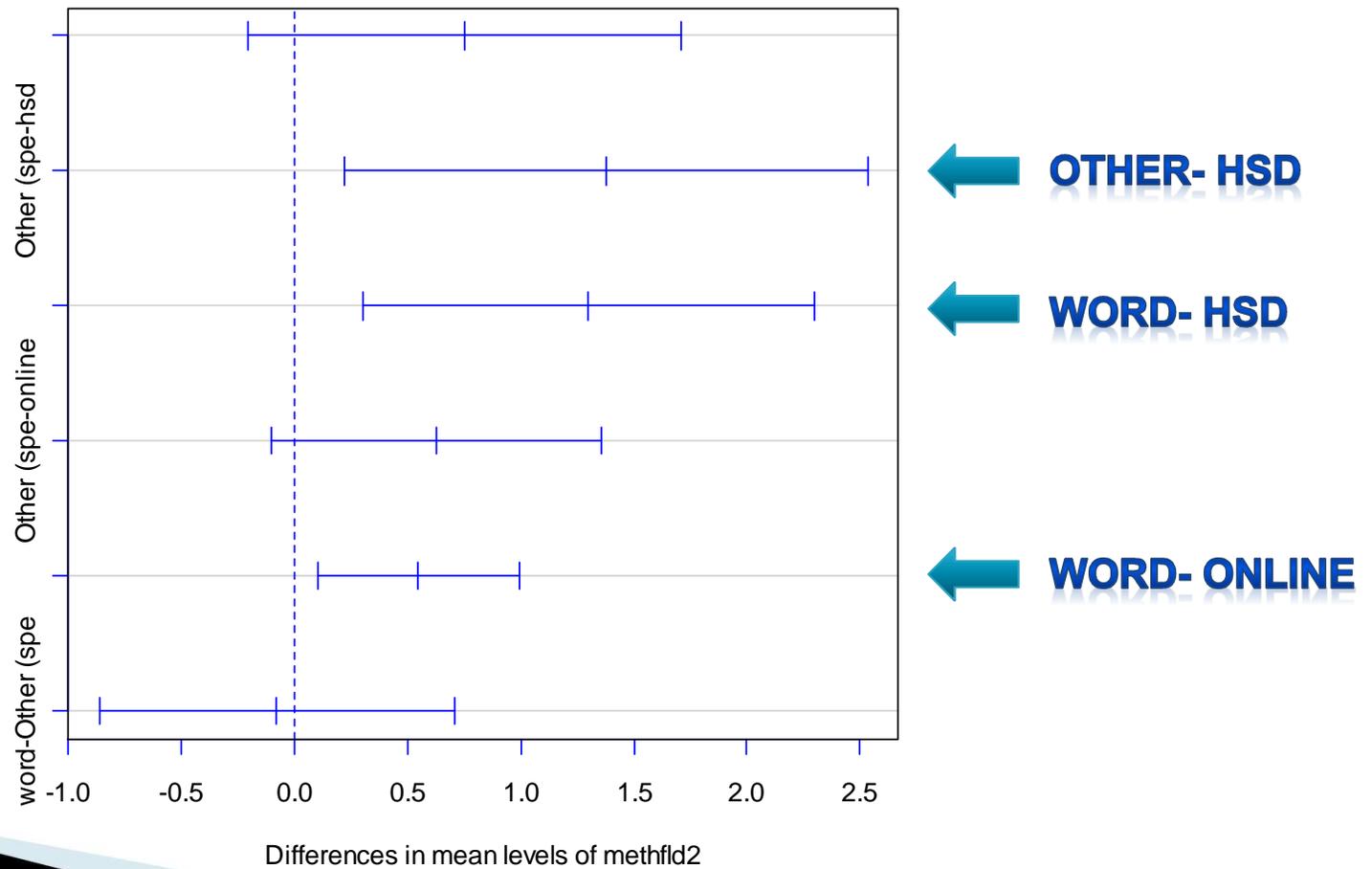
Results: Tukey Test

- Test
 - H_0 : Mean difference between any of the platforms is zero.
 - H_A : At least one of the differences is different from zero.



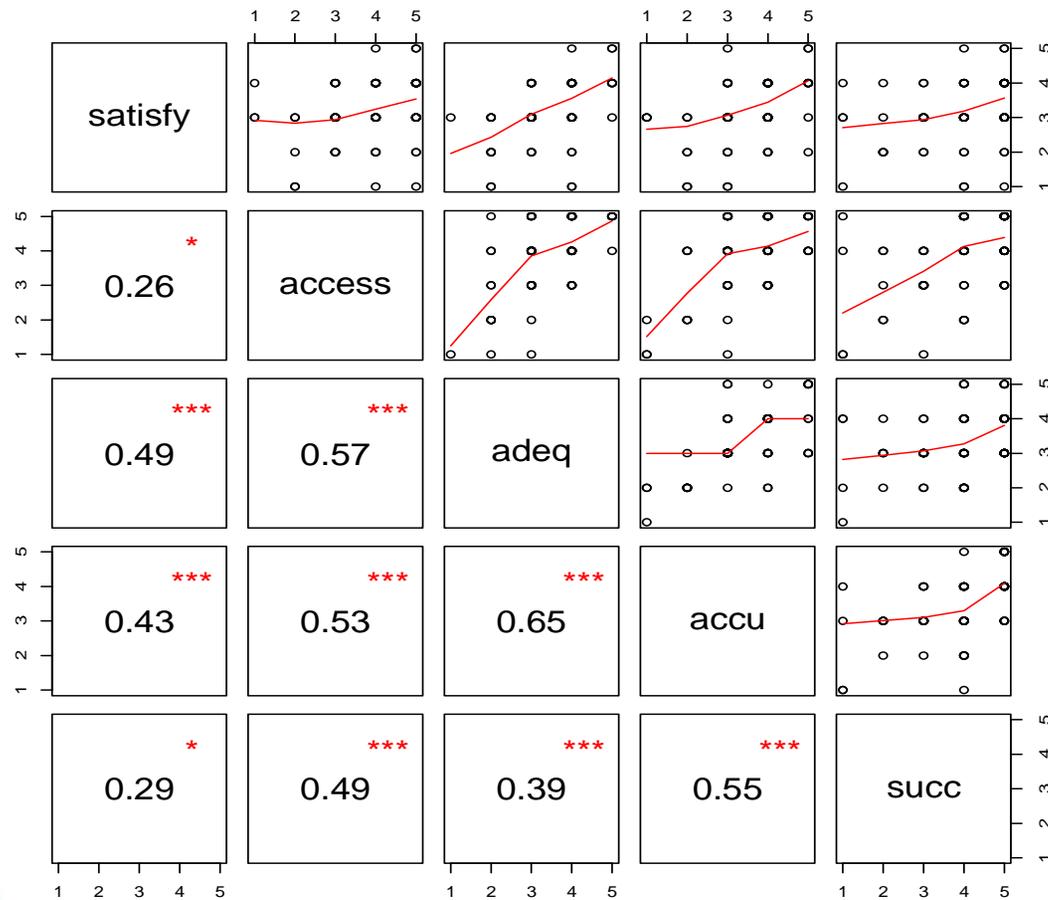
Results: Tukey Test for Both Groups

95% family-wise confidence level



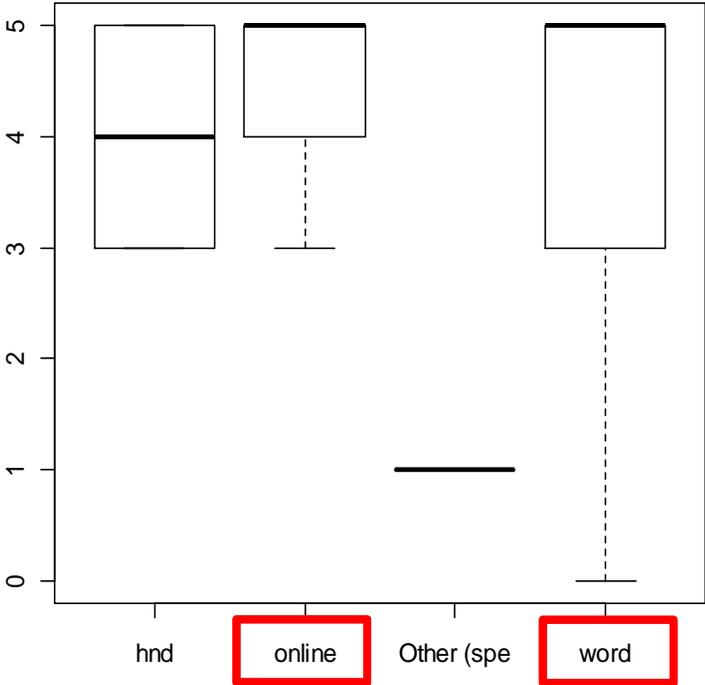
Results: Search Platform Attributes

- Satisfaction vs Attributes of Searching Platform

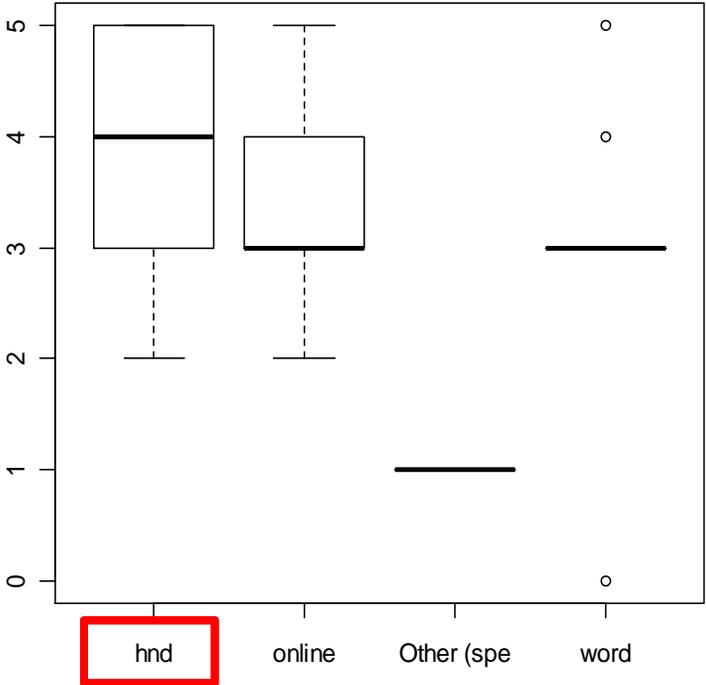


Results: Undergraduate Expectation of Searching Experience

Assumed accessibility level of each platform

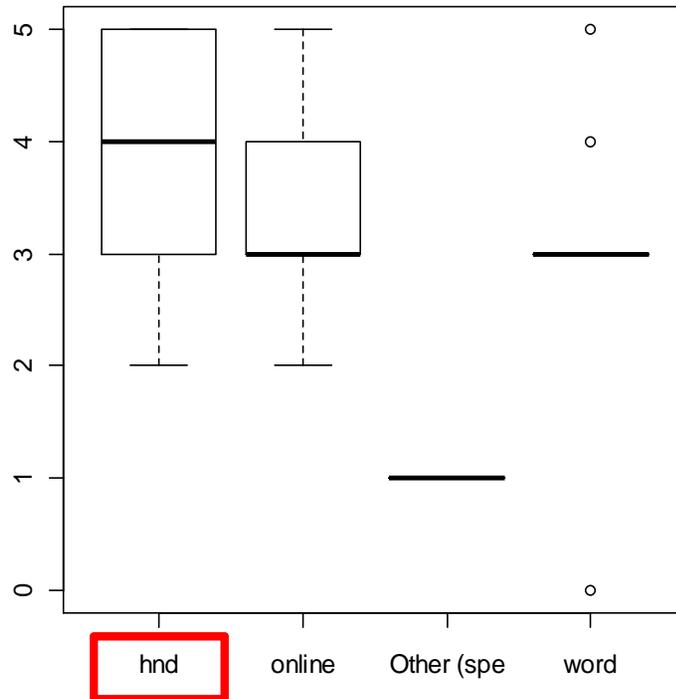


Assumed adequate level of each platform

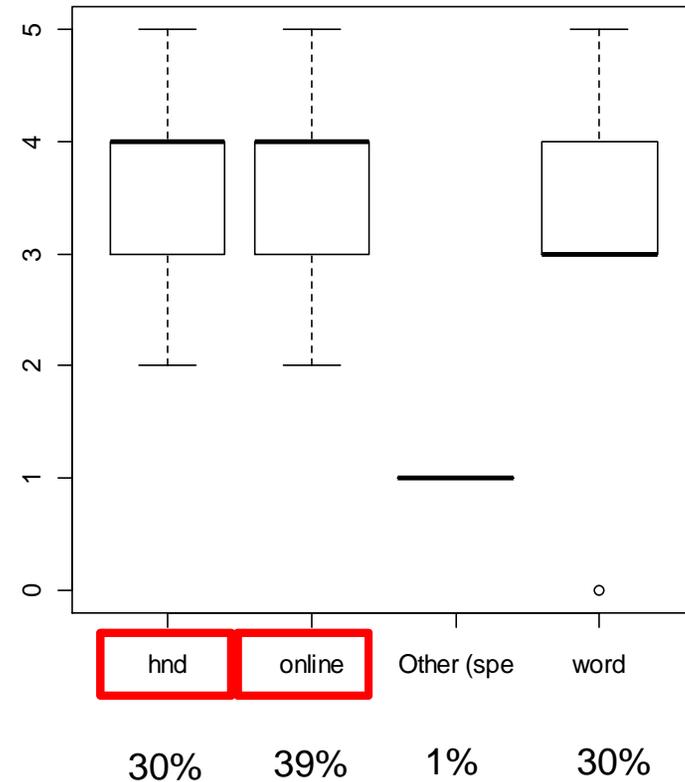


Results: Undergraduate Expectation of Searching Experience

Assumed accuracy level of each platform

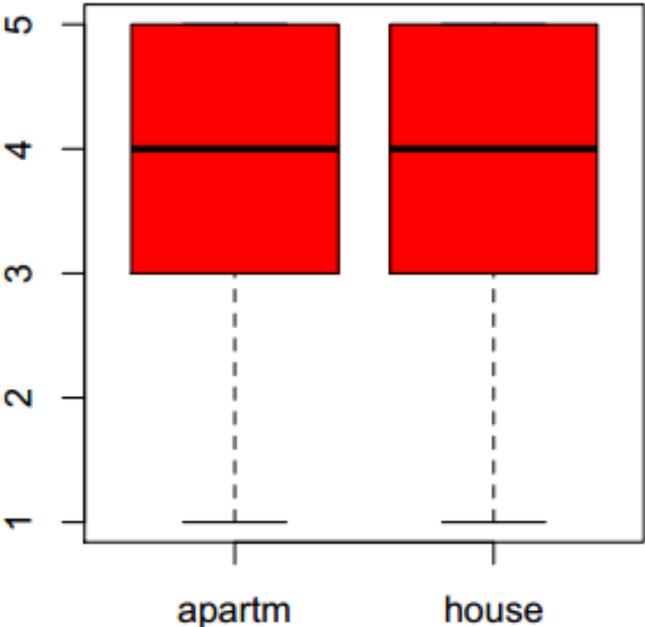


Assumed likelihood of success of each platform

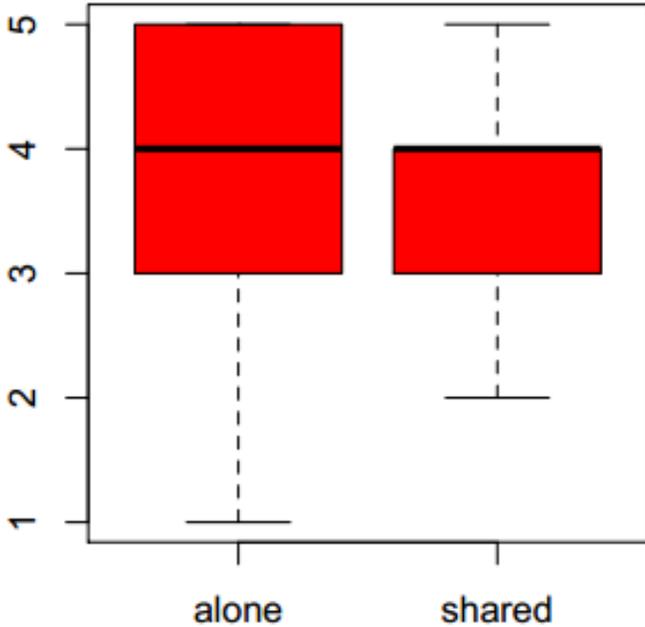


Results: Graduate Likelihood of Success vs. Preferences

Success by Type of Residence

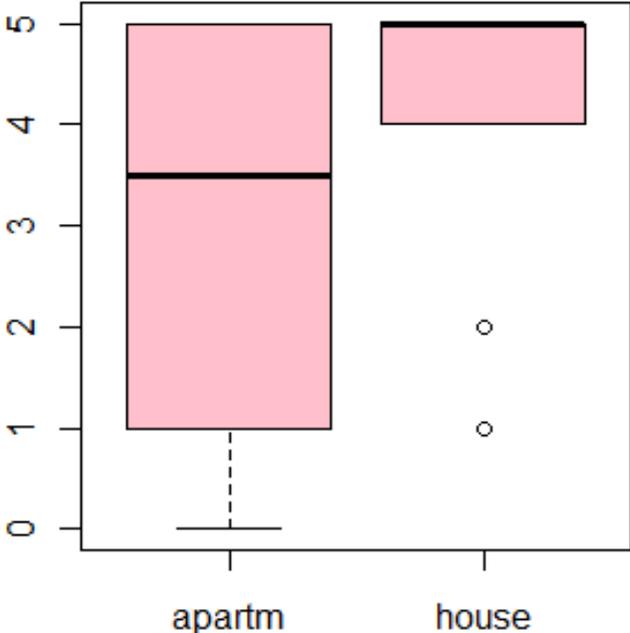


Success by Share Check

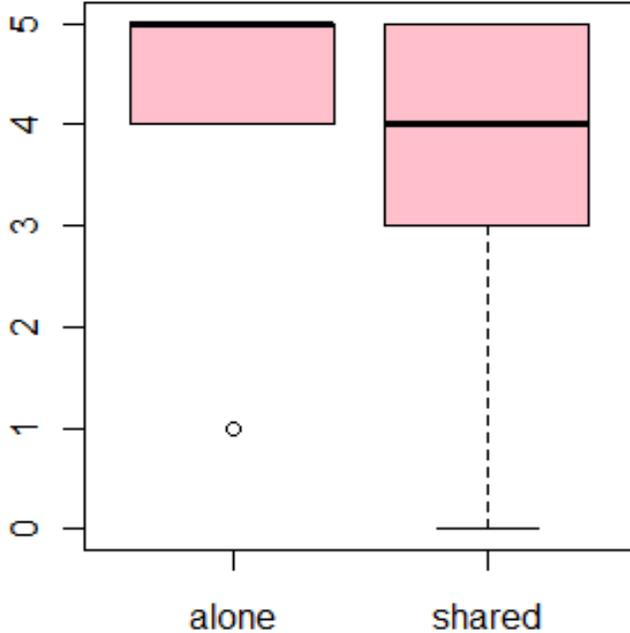


Results: Undergraduate Likelihood of Success vs. Preferences

Success by Type of Residence



Success by Share Check



Summary of Preferences

Graduate

- Apartment 72%
- House 28%

- Alone 53%
- Shared 47%

- Walk time average
20 min

- Monthly rent average
(\$375, \$696)

- Preferred method of payment
Online (67%)
Check (62%)

Undergraduate

- Apartment 54%
- House 46%

- Alone 20%
- Shared 80%

- Walk time average
15min

- Monthly rent average
(\$287,\$582)

- Preferred method of payment
Online (79%)
Credit Card (55%)

Conclusion

- Strengths
 - 25% response rate
 - Pre testing with diversified group
- Weaknesses
 - Incomplete surveys
 - Sampling error with C-Book



Conclusion

- Take Home Messages
 - No overall satisfactory platform
 - Housing and Dining Services
- Advice
 - Computerized version of C-Book
 - Expect delays and difficulties when working with human subjects
 - Prizes do not necessarily ensure a larger response rate



Thank You

Questions?

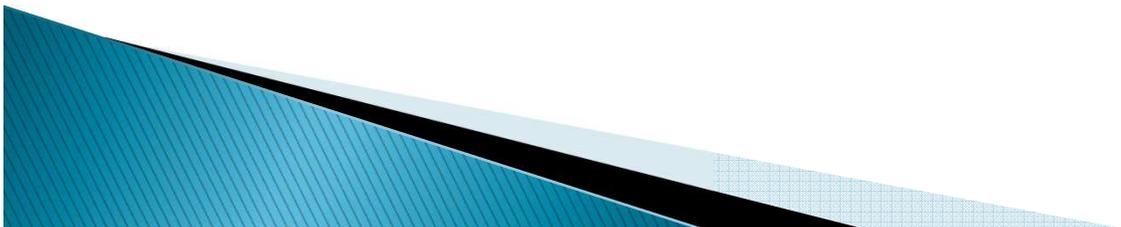
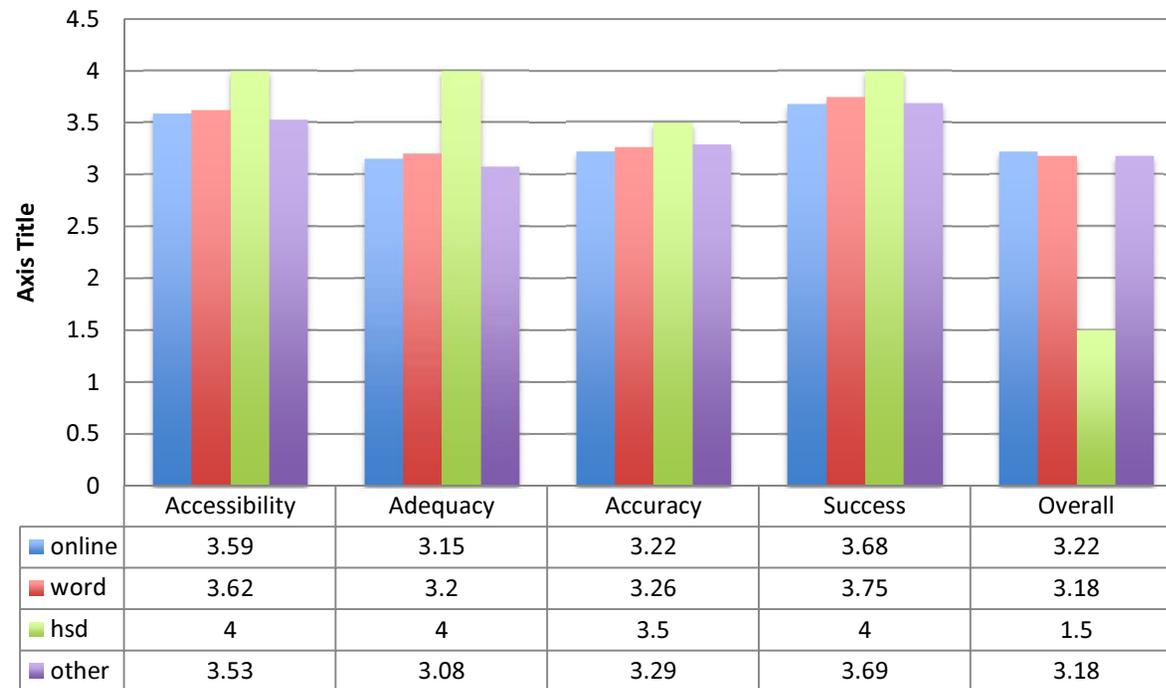


Backup Slides



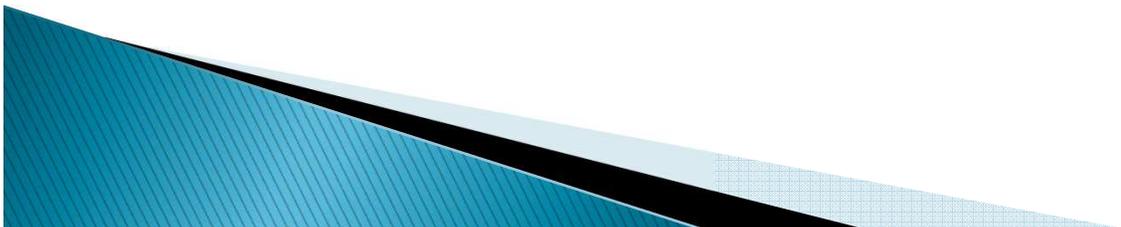
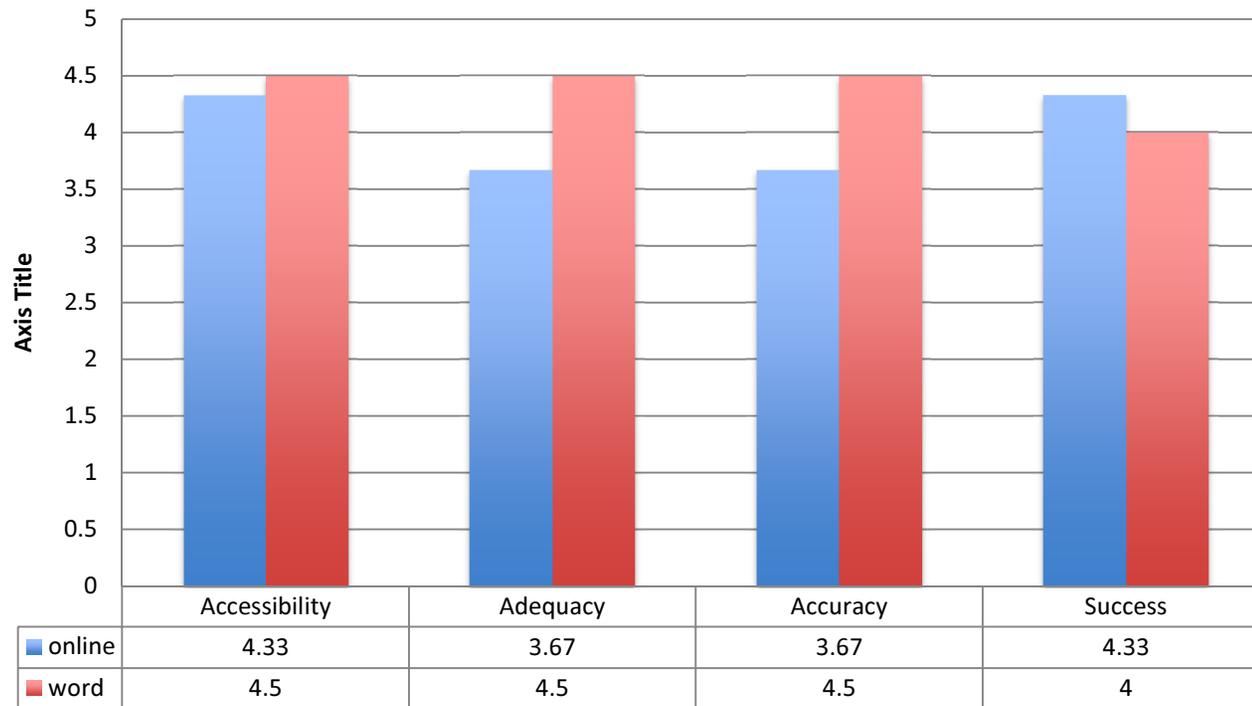
Results

Average Ratings of Platforms (Searched)



Results

Average Ratings of Platforms (Haven't Searched)



Results

Coefficients:

| | Estimate | Std. Error | t value | Pr(> t) | |
|-------------|----------|------------|---------|----------|----|
| (Intercept) | 1.28459 | 0.41668 | 3.083 | 0.00291 | ** |
| access | -0.09292 | 0.10996 | -0.845 | 0.40090 | |
| adeq | 0.41110 | 0.14190 | 2.897 | 0.00499 | ** |
| accu | 0.16732 | 0.13753 | 1.217 | 0.22773 | |
| succ | 0.06834 | 0.09673 | 0.706 | 0.48218 | |

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.7737 on 72 degrees of freedom

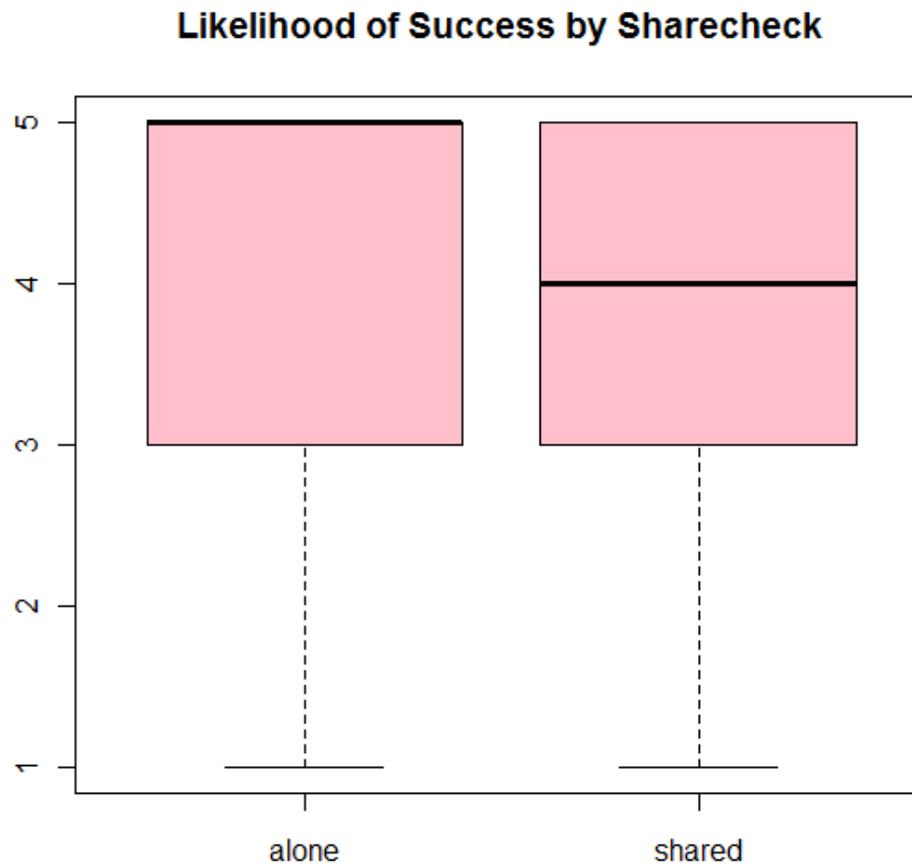
Multiple R-squared: 0.2751, Adjusted R-squared: 0.2348

F-statistic: 6.831 on 4 and 72 DF, p-value: 0.0001017



Results:

Likelihood of Success vs. Preferences



Results:

Likelihood of Success vs. Preferences

Likelihood of Success by Type of Housing

