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QuantUXR to QuantCritUXR:

Strategies for Centering Underrepresented Individuals in Research

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Outline & Goals

1. Historical Context
2. Quant Crit
3. Example: Survey Design
4. Example: Analysis Choices
5. Q & A

Goals

Explain quantitative critical methods as an approach for conducting quantitative research

Identify applications of quantitative critical methods for quantitative UXR

Historical Context

1830s
Positivism philosophy (search for objective truth) guides science and is often associated with quantitative methods[1]

1920s
Critical Theory emerges recognizing societal, historical, and emancipatory influences on research/inquiry[2]

1950s
Psychologists conduct 'UX Research' testing use of phones[3]

1990s
First UXR role titled at Apple[3]

2006
Quant UXR Role posted at Google[4]

2010s
QuantCrit construct offers new perspective on quant. methods[5]

2020s
Product equity frameworks encourage synergy of humanistic + business goals[6]

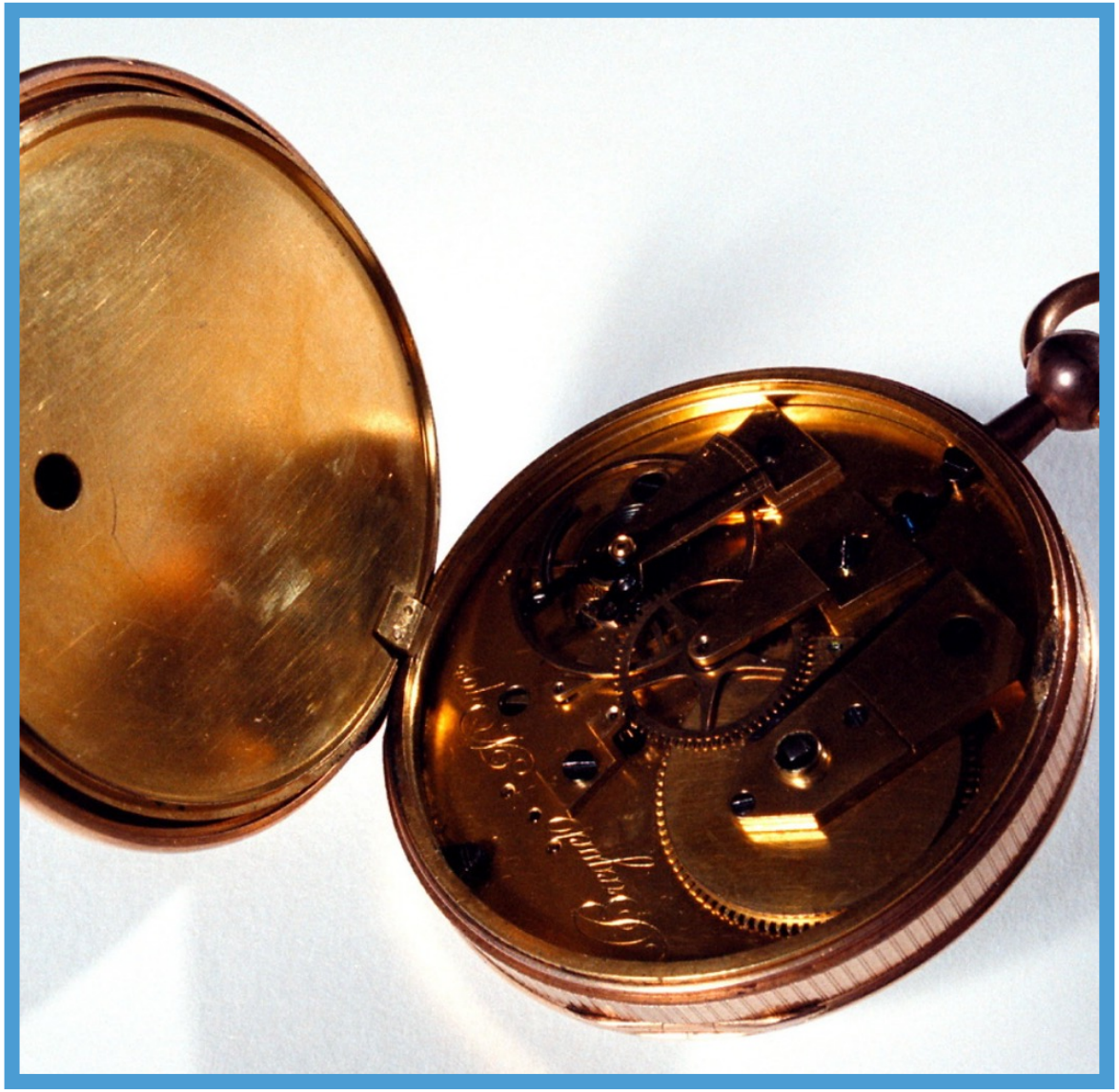
1900 1920 1940 1960 1980 2000 2020

Quantitative Critical Methods (QuantCrit)[5]

Aspects	Considerations
1. Challenges quantifying race & implicitness of racism	1. How do we think about race/racism when researching products?
2. Numeration may create deficit-oriented biases	2. How are we telling stories with our data when conveying results?
3. Categorization process requires reflexivity	3. How can we be thoughtful about categorizing individuals?
4. Data cannot speak for populations	4. What are strategies for amplifying voices?
5. Analyses are often best guesses but can provide action for equity	5. How can we accurately use results despite limitations?

Case study

- You're developing a product feature and want to focus on product equity.
- Research Question: how does a user's race relate to their satisfaction with your product?
- You conduct a survey to gather information and plan to conduct a regression.



CASE STUDY

Survey Question Design

- Problem: survey instrument has limited options for racial identity
- Consequence: Some participants in testing did not feel seen or represented.
  - Discussed the impact this had on their survey responses during usability testing.
- Solution: Expanded response options were included in the final survey that included broader list of racial identities.
- "I identify as: ____" option included as opposed to "Other, please specify" to capture identities that were not included.

CASE STUDY

Survey Response Example

ORIGINAL

Choose one or more races that you consider yourself to be

- [ ] White
- [ ] African American
- [ ] American Indian/Native American
- [ ] Asian
- [ ] Native Hawaiian
- [ ] Other
- [ ] Prefer not to say

REVISED

Choose one or more races that you consider yourself to be

- [ ] White or Caucasian
- [ ] Black or African American
- [ ] American Indian/Native American or Alaska Native
- [ ] Asian
- [ ] Native Hawaiian or Other Pacific Islander
- [ ] I identify as:

  _____
- [ ] Prefer not to say

CASE STUDY

Impact on Survey Experiences of Participants

- Participants experience fewer friction points when answering questions related to their racial identity
  - Even if these expansive categories are not used in the analysis
- The impact of a respondent's attitudes towards the survey instrument is reduced.
- Expansive categories can be leveraged in analysis in creative ways.

Analysis Choices

- Research Question: how does a user's race relate to their satisfaction with your product?

- Regression
  - Dummy code - Tests the difference between one group and a reference category

  - Effect code[7] - Tests the difference between one group and an average
    - Aspect 2: numeration process may alter results
    - Aspect 4: amplify populations in different ways

CASE STUDY

Storytelling through Analysis Choices

- Dummy code vs. Effect code[7]
  - We see how a different reference category changes the result & get results for all categories

```
Call:
lm(formula = Satisfaction ~ factor(Race), data = df)

Residuals:
    Min      1Q  Median      3Q     Max
-5.5172 -2.4412 -0.3065  2.6935  5.5588

Coefficients:
                   Estimate Std. Error t value Pr(>|t|)
(Intercept)          5.3065     0.1658  32.009   <2e-16 ***
factor(Race)Hispanic -0.8653     0.3975  -2.177   0.0300 *
factor(Race)Black    -0.2720     0.4249  -0.640   0.5223
factor(Race)Asian     1.2107     0.5776   2.096   0.0366 *
factor(Race)Bi-Racial 0.3089     0.8428   0.366   0.7142
factor(Race)Native   -0.9732     1.2276  -0.793   0.4283
factor(Race)Other    -2.3065     2.9840  -0.773   0.4399
factor(Race)Hawaiian  2.1935     2.1133   1.038   0.2998
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1
```

```
Call:
lm(formula = Satisfaction ~ white_e1 + hispanic_e1 + black_e1 +
    asian_e1 + biracial_e1 + native_e1 + other_e1, data = df)

Residuals:
    Min      1Q  Median      3Q     Max
-5.5172 -2.4412 -0.3065  2.6935  5.5588

Coefficients:
             Estimate Std. Error t value Pr(>|t|)
(Intercept)  5.21852    0.50148  10.406   <2e-16 ***
white_e1     0.08799    0.52163   0.169   0.8661
hispanic_e1 -0.77734    0.59110  -1.315   0.1891
black_e1    -0.18403    0.60521  -0.304   0.7612
asian_e1     1.29873    0.69359   1.872   0.0617 .
biracial_e1  0.39687    0.87386   0.454   0.6499
native_e1   -0.88518    1.16667  -0.759   0.4484
other_e1    -2.21852    2.62855  -0.844   0.3991
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1
```

```
Call:
lm(formula = Satisfaction ~ hispanic_e2 + black_e2 + asia
    biracial_e2 + native_e2 + other_e2 + hawaiian_e2, dat

Residuals:
    Min      1Q  Median      3Q     Max
-5.5172 -2.4412 -0.3065  2.6935  5.5588

Coefficients:
             Estimate Std. Error t value Pr(>|t|)
(Intercept)   5.2185     0.5015  10.406   <2e-16 ***
hispanic_e2  -0.7773     0.5911  -1.315   0.1891
black_e2     -0.1840     0.6052  -0.304   0.7612
asian_e2      1.2987     0.6936   1.872   0.0617 .
biracial_e2   0.3969     0.8739   0.454   0.6499
native_e2    -0.8852     1.1667  -0.759   0.4484
other_e2     -2.2185     2.6285  -0.844   0.3991
hawaiian_e2   2.2815     1.8922   1.206   0.2285
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1
```


*R code on GitHub: https://github.com/kfassett/Quant-UX-Con-2023.git

Summary

Survey structure may influence the way people show up and participate

Choices made during analyses shape the stories we tell and share with our collaborators

Continue to consider how to improve product equity throughout the lifecycle of QuantUX Research

Q & A

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