

Inclusivity Through Accessible Web-Based Surveys

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Three Key Points for Today

- How do we make web-based surveys **equitable** and not just accessible and inclusive?
- Does it work?
- Are there unintended consequences?



Accessibility: Background

1

Conduct a Diversity, Equity, and Inclusivity survey as a *census* study at a large university

2

Assure that the study be open and available to all students, faculty, and staff who wish to participate

3

Participants should be given an equal opportunity to participate confidentially

4

Adjust the web-based survey to adapt for screen readers or other assistive devices

GOAL:

Provide an equitable experience for all participants, not only accessible and inclusive.

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How we made surveys equitable . . .



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Technical Background

- Utilize technology and survey design to improve respondent interaction and data quality
- We must consider those who use computers in non-standard ways
- Assistive/accessible technologies cover a large segment:
 - Assistive hardware (e.g. Braille displays)
 - Screen readers & magnifiers
 - Speech control / dictation software
 - Mousegrids



Technical Background II

- Consulted with experts in IT-Accessibility & Institutional Equity
- WebAIM (webaim.org)
- WCAG
(<https://www.w3.org/WAI/standards-guidelines/wcag/>)
- Implemented changes including:
 - Overall design changes (header, question layout)
 - Code changes (input box labels, toggle indicator)
 - Question wording differences (semantic differentials)



“Detecting” Assistive Tech

- No good way to do this via script
- With the wide variety of devices, unlikely that any one detection method would suffice
- Solution? **Ask!**

This web survey is available in an accessibility optimized format. Check this box if you will be using assistive technologies such as screen readers during this survey.




Design Modifications: Remove / Move Header Contents

The image displays two overlapping browser windows from SoundRocket. The top window shows the survey header with the SoundRocket logo, the title "Campus Climate Survey", and a "Questions?" button. Below the header are three navigation tabs: "Part I" (highlighted in orange), "Part II", and "Part III". The bottom window shows a question titled "What is the highest degree you have earned?" with a list of radio button options: High school diploma or GED, Two-year college degree (Associate's), Four-year college degree (Bachelor's), Master's degree in the Arts and Sciences (MA, MS), Professional Master's degree (e.g., MBA, MPA, MSW, MSE, MSN, MPH, MFA, etc.), Ph.D., Other Doctoral degree (e.g., EdD, DDiv, DrPH, DBA, etc.), Medical degree (MD, DO, DDS, DVM), Law degree (JD, LLM, SJD), and Other degree (Please specify): [input field]. Navigation buttons for "<< Previous" and "Next >>" are visible at the bottom of the survey content.

Design Modifications: Grids

Example Survey x

127.0.0.1:13124/Previewer/Survey.ashx

 **Example**

About You | **Your Institution**

Please select how often you participate in the following activities.

	Never	Occasionally	1-2 times a month
Campus clubs or groups	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Class study groups	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sporting events	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Social events on-campus	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Social events off-campus	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

<< Previous | Next >>

Example Survey x

127.0.0.1:13124/Previewer/Survey.ashx

Please select how often you participate in the following activities.

Campus clubs or groups

- Never
- Occasionally
- 1-2 times a month
- Weekly
- Daily

Class study groups

- Never
- Occasionally
- 1-2 times a month
- Weekly
- Daily

Sporting events

- Never
- Occasionally
- 1-2 times a month
- Weekly
- Daily

Social events on-campus

- Never
- Occasionally
- 1-2 times a month
- Weekly
- Daily

Social events off-campus

- Never
- Occasionally
- 1-2 times a month
- Weekly
- Daily



Code Modifications

Campus Climate Survey x

127.0.0.1:13124/Previewer/Survey.ashx

What is the highest degree you have earned?

- High school diploma or GED
- Two-year college degree (Associate's)
- Four-year college degree (Bachelor's)
- Master's degree in the Arts and Sciences (MA, MS)
- Professional Master's degree (e.g., MBA, MPA, MSW, MSE, MSN, MPH, MFA, etc.)
- Ph.D.
- Other Doctoral degree (e.g., EdD, DDiv, DrPH, DBA, etc.)
- Medical degree (MD, DO, DDS, DVM)
- Law degree (JD, LL.M., SJD)
- Other degree (Please specify):

<< Previous Next >>

Questions?

```
buttonId.setAttribute("aria-expanded", "true");
```



Q Modifications: Semantic Differentials

For the next several questions, select one option between each set of adjectives that best represents how you would rate **your institution** based on **your direct experiences**:

Disrespectful Respectful

Diverse Homogenous

Friendly Hostile

Racist Non-racist

<< Previous Next >>

SoundRocket

Campus Climate Survey x

127.0.0.1:13124/Previewer/Survey.ashx

For the next few questions, we will ask you to think about a scale from one to five. You will be presented with a word pair where one represents the first word of the pair, and 5 represents the second word of the pair.

Thinking of the words Friendly and Hostile, where 1 represents Friendly and 5 represents Hostile. On the scale of 1 to 5, including all values in between, which adjective best represents how you would rate your institution based on your direct experiences.

1
 2
 3
 4
 5

Thinking of the words Diverse and Homogenous, where 1 represents Diverse and 5 represents Homogenous. On the scale of 1 to 5, including all values in between, which adjective best represents how you would rate your institution based on your direct experiences.

1
 2
 3
 4
 5

Did it work?



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Study Design (DEI Survey @ University of Michigan)

Questionnaire

- Average 15 minutes
- Mobile optimized
- Accessible to all

Incentives

- Lottery, Individual

Messaging

- Coordinated
- Consistent
 - Authoritative internal sources
 - Media, press
 - External sources

Two-phase communication design

- Phase I: Mass
 - Mail & E-mail contacts
- Phase II: Personal
 - Interviewer phone & in-person contacts

Data Collection

- Schedule
 - Institutional calendar
 - Holidays



Who *Actually* Used the Accessibility Options?

	Accessible Version	Standard Version
Completes + Partial (n)	364	9,644
Completion Time (mean number of minutes)	12.10	11.49
Self-reported Disability	3.9% (14)	6.3% (603)
Types of disabilities reported...		
Acquired/Traumatic Brain Injury	-	3.7% (22)
Attention Deficit/Hyperactivity Disorder	42.9% (6)	21.6% (130)
Asperger's/Autism Spectrum	-	5.3% (32)
Blind/Low Vision	14.3% (2)	2.3% (14)
Deaf/Hard of Hearing	21.4% (3)	4.8% (29)
Cognitive or Learning Disability	14.3% (2)	10.6% (64)
Chronic Illness/Medical Condition	7.1% (1)	24.1% (145)
Mental Health/Psychological Condition	35.7% (5)	51.7% (311)
Physical/Mobility condition that affects walking	-	7.8% (47)
Physical/Mobility condition that does not affect walking	7.1% (1)	6.0% (36)
Speech/Communication Condition	-	2.2% (13)
Other (please specify)	7.1% (1)	6.6% (40)



Satisfaction with Overall Campus DEI Climate

	Acc ON	Acc OFF	Disabled	Non-Disabled	Accessible Version + Disabled	Non-Accessible Version + Disabled
Very Satisfied + Satisfied %	54	63	51	63	40	51
n	76	9506	469	9070	6	463
<hr/>						
Neutral %	29	23	27	23	40	27
n	41	3542	249	3308	6	243
<hr/>						
Dissatisfied + Very Dissatisfied %	17	14	23	14	20	23
n	24	2165	211	1957	3	208

NS

Chi-square = 78.45
p < 0.01

NS



Satisfaction with DEI Climate in Work Unit

	Acc ON	Acc OFF	Disabled	Non- Disabled	Accessible Version + Disabled	Non-Accessible Version + Disabled
Very Satisfied + Satisfied %	58	63	48	65	67	48
N	81	9599	442	9192	10	432
<hr/>						
Neutral %	19	17	19	16	7	20
N	26	2510	179	2341	1	178
<hr/>						
Dissatisfied + Very Dissatisfied %	24	20	33	19	27	33
N	33	3021	303	2725	4	299

NS

Chi-square = 121.78
p < 0.01

NS

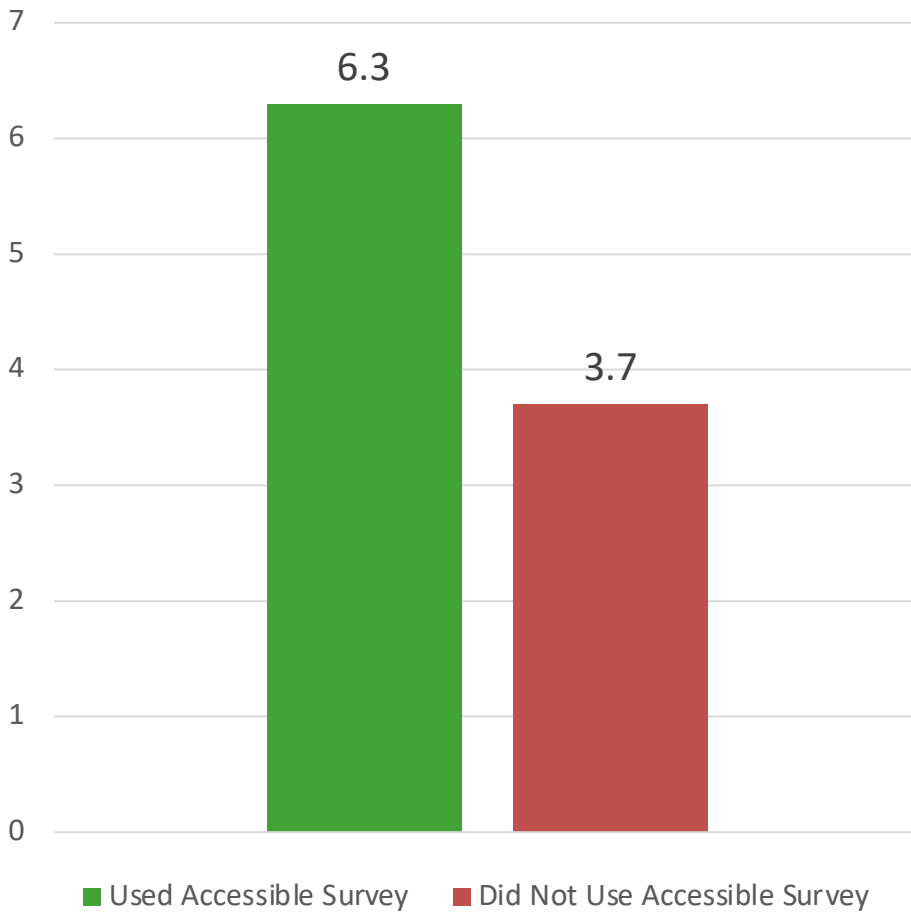


Unintended Consequences . . .



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Felt Discrimination re: Ability/Disability Status in Past 12 Months

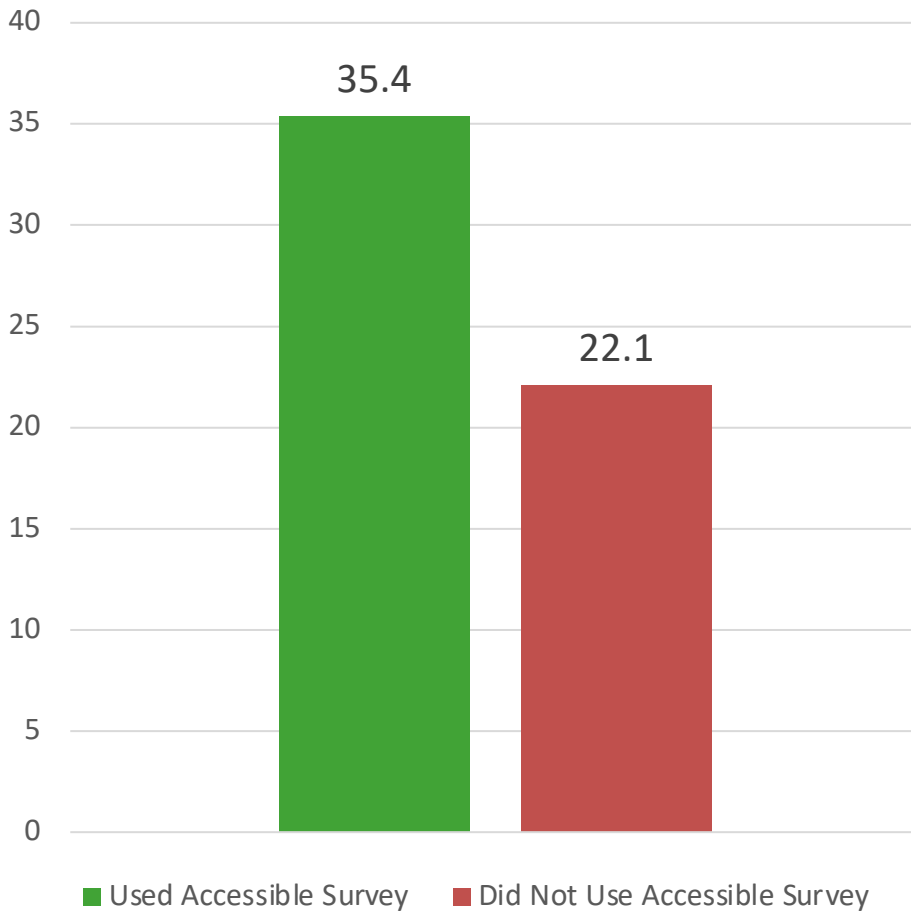


Those who used the accessible version of the survey did report a higher level of discrimination regarding their ability/disability status—**but it was not a significant difference.**

Chi-square = 3.35
p = 0.067.



Felt Discrimination re: Racial/Ethnic Identity in Past 12 Months

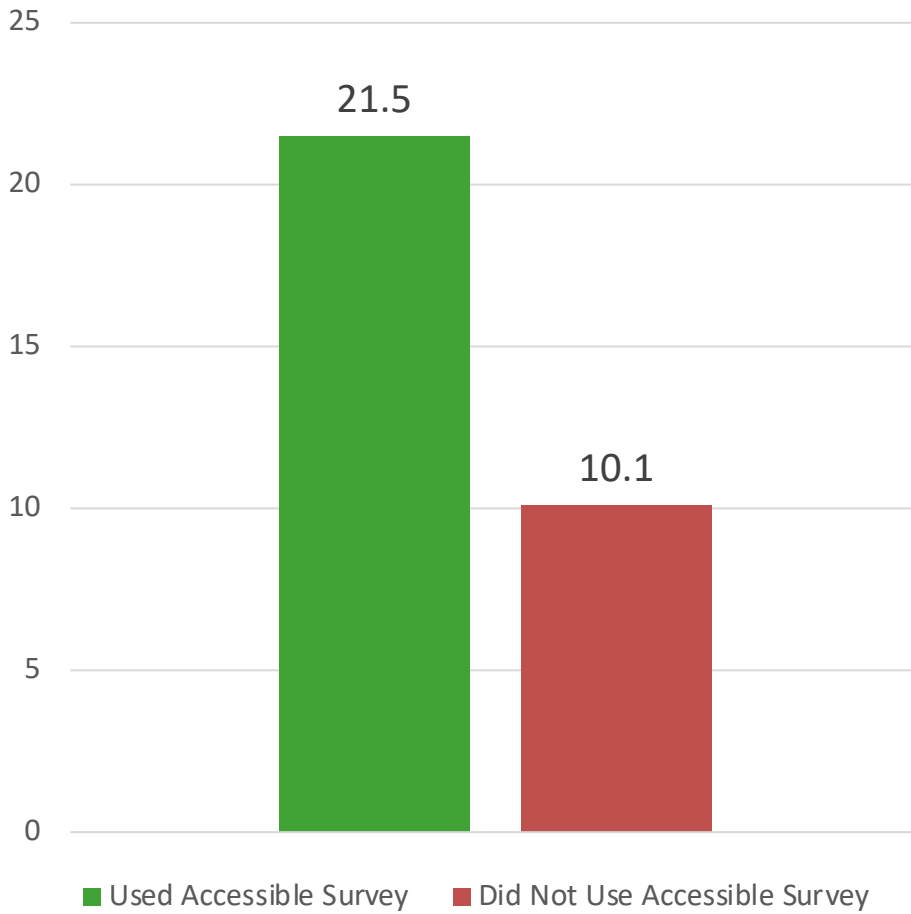


Those who used the accessible version of the survey also reported a higher level of discrimination based on racial/ethnic identity—and this **was significant**.

Chi-square = 18.5929
p < 0.01



Felt Discrimination re: Country of Origin in Past 12 Months



Those who used the accessible version of the survey also reported a higher level of discrimination based on racial/ethnic identity—and this **was significant**.

Chi-square = 25.20
p < 0.01



Why more difference in non-disability measures?

We wondered why we were seeing such differences . . .

So we returned to look at WHO exactly used the accessible version of the survey . . . (remember, only 3.9% of those who used it claimed they had a disability).



Who Did We Think Will Use the Accessibility Options?

It was anticipated that the participants opting-in to the accessible version of the survey would be **those with visual or auditory impairments who rely on assistive technology software** to interact with digital content.

What we discovered, however . . .



Who *Actually* Used the Accessible Version?

		Accessible Version	Standard Version
Were you born in the United States, Puerto Rico, a U.S. Island area, or born abroad of U.S. citizen parents?	Yes	49.9%	73.6%
	No	50.1%	26.4%
Citizenship Status - Sample Variable	Non-Resident Alien	35.2%	14.1%
	Permanent Resident	1.9%	2.1%
	U.S. Citizen	62.9%	83.7%

50.1% of respondents using the accessible version reported that they were not born in the United States, compared to **26.4%** using the standard version.

Using a variable indicating citizenship status, which was provided by the university in the sample file, we determined that **35.2%** of accessible version respondents were classified as "Non-Resident Alien", compared to only **14.1%** of standard version participants.



Why so many non-US born / non-Citizens?

We don't know for sure—more research is needed.

But we believe it is due to reliance on **screen reading translation tools**. Students who do not speak English as their primary language may be relying on translation software to complete the survey.



Concluding Thoughts

- (More) equal, accessible & inclusive surveys are possible with a careful approach to the technology, and guidance from experts.
- Accessible designs are used when made available and do allow people to participate who appear different. ***Theoretically, this may be reducing nonresponse bias.***
- Equitable designs ***may also bring in others*** who rely on different types of assistive technology, in particular, for language translation.
- The ***study topic may also be relevant.*** It is easy to consider how the DEI topic may have had a role in these results. We do not yet know if a similar substantive impact would be found in different topics.



Thank you!



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