

Endorsement of Select All versus Forced Choice Response Options in Behavioral, Factual, and Attitudinal Questions in a Web Survey

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Background

Select All

- Asks respondents to select all items that apply to them & leave other items blank
- Reduces space, mouse clicks, and questions in survey
- Reduces respondent burden
- May decrease data quality (e.g., primacy effects, not reading each item)
 - Unclear if skips = “no” or satisficing

[Lau and Kennedy, 2019](#)
[Rasinski, Mingay, and Bradburn 1994](#)

Forced Choice

- Asks respondents to select “Yes” or “No” for each item
- Leads to greater item-level endorsement (“yes” responses)
- Requires more mouse clicks
- Increases respondent burden
- Deeper cognitive processing or acquiescence bias?

[Callegaro et al. 2015](#)
[Smyth et al. 2006](#)



What are all of the things you have done to find work during the last 4 weeks? *Select all that apply.*

- ☐ Interviewed with an employer
- ☐ Placed or answered ads
- ☐ Sent out resumes/applications either online or paper
- ☐ Contacted employment agency/school employment center
- ☐ Asked friends, relatives, network about job leads
- ☐ Worked on resume
- ☐ Looked at ads
- ☐ Attended job training programs/courses
- ☐ Other (please specify)

Please indicate whether or not you did each of the following things to find work during the last 4 weeks.

	Yes	No
Interviewed with an employer	☐	☐
Placed or answered ads	☐	☐
Sent out resumes/applications either online or paper	☐	☐
Contacted employment agency/school employment center	☐	☐
Asked friends, relatives, network about job leads	☐	☐
Worked on resume	☐	☐
Looked at ads	☐	☐
Attended job training programs/courses	☐	☐
Other (please specify)		

Question Types

Behavioral

Factual

Attitudes

Knowledge

Hypothetical

Research Questions

- Does question format (SA vs. FC) affect level of endorsement?
 - ▶ Does question type moderate the level of endorsement?
- Does question format impact data quality (i.e., whole question and item-level missingness)?
- Are there differences in burden (i.e., time spent on survey) by question format?



Design

- Participants (N=1008) were randomly assigned to one of two question format conditions:
 - ▶ Select All (n=503)
 - ▶ Forced Choice (n=505)
- All participants received 3 question types with 8-10 items per question; question types and items presented in random order, except work question
 - ▶ Behavioral
 - What they did to look for work; mobile apps used in the past 12 months
 - ▶ Factual
 - What appliances were included with their current home/rental
 - ▶ Attitudes
 - Survey Attitude Scale (de Leeuw et al., 2019)

Methods

- Participants were recruited from a nonprobability web panel to complete an online survey in Nov. 2023
 - ▶ Median time on survey = 3.7 minutes
 - ▶ Received \$1 incentive



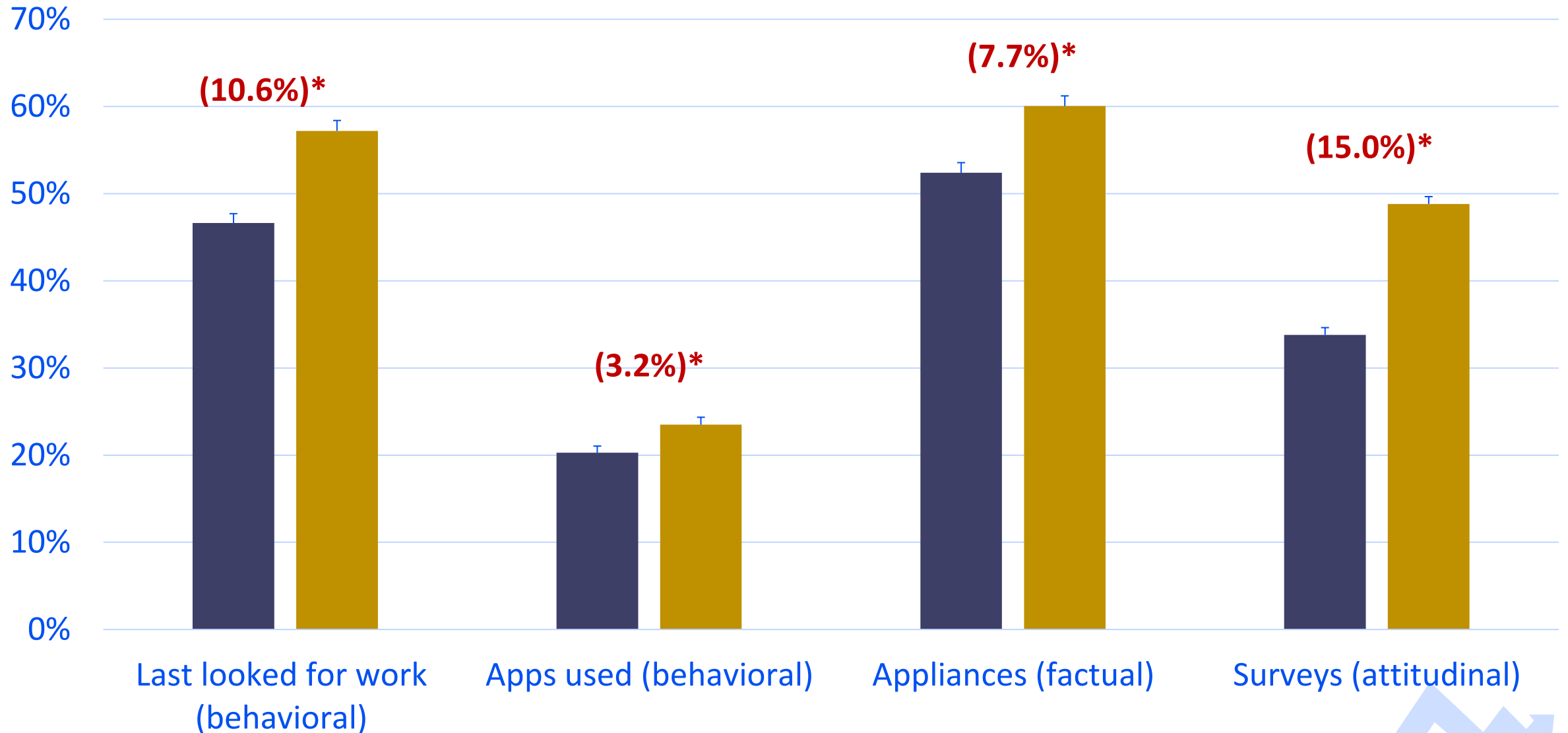
Participants

- Average age = 37.5 years
- Female = 52.5%; Male = 47.5%
- Education
 - ▶ Bachelor's Degree or higher = 59.8%
 - ▶ Some college or Associate's Degree = 29.6%
 - ▶ High school graduate = 9.5%
 - ▶ Less than high school = 1.1%

Results

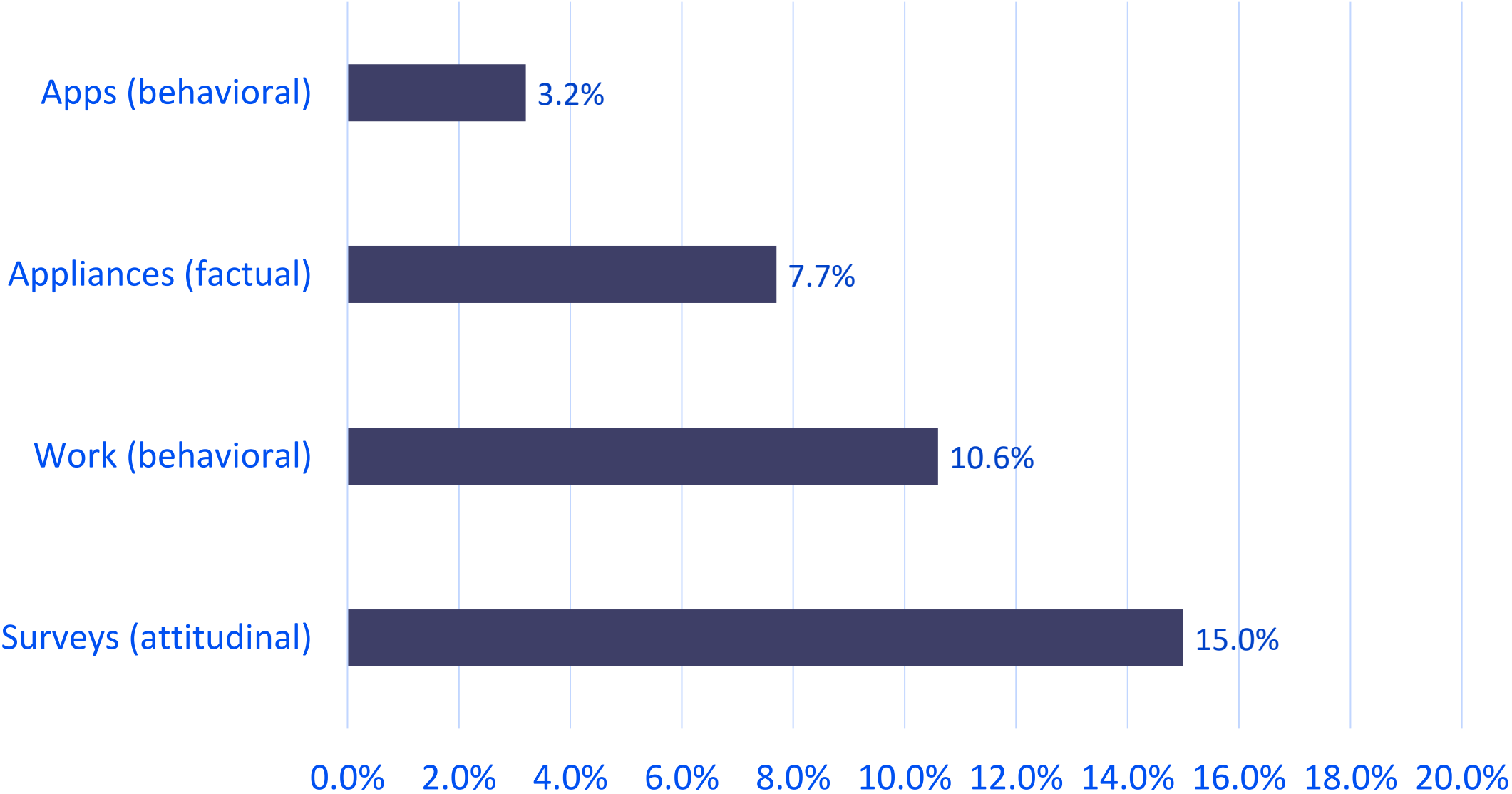


Overall % Endorsement by Question Type and Format



% Difference Between Endorsement of SA vs FC by Question Type

(all pairwise comparisons significant, $ps < .05$)



Behavioral Question 1: Work

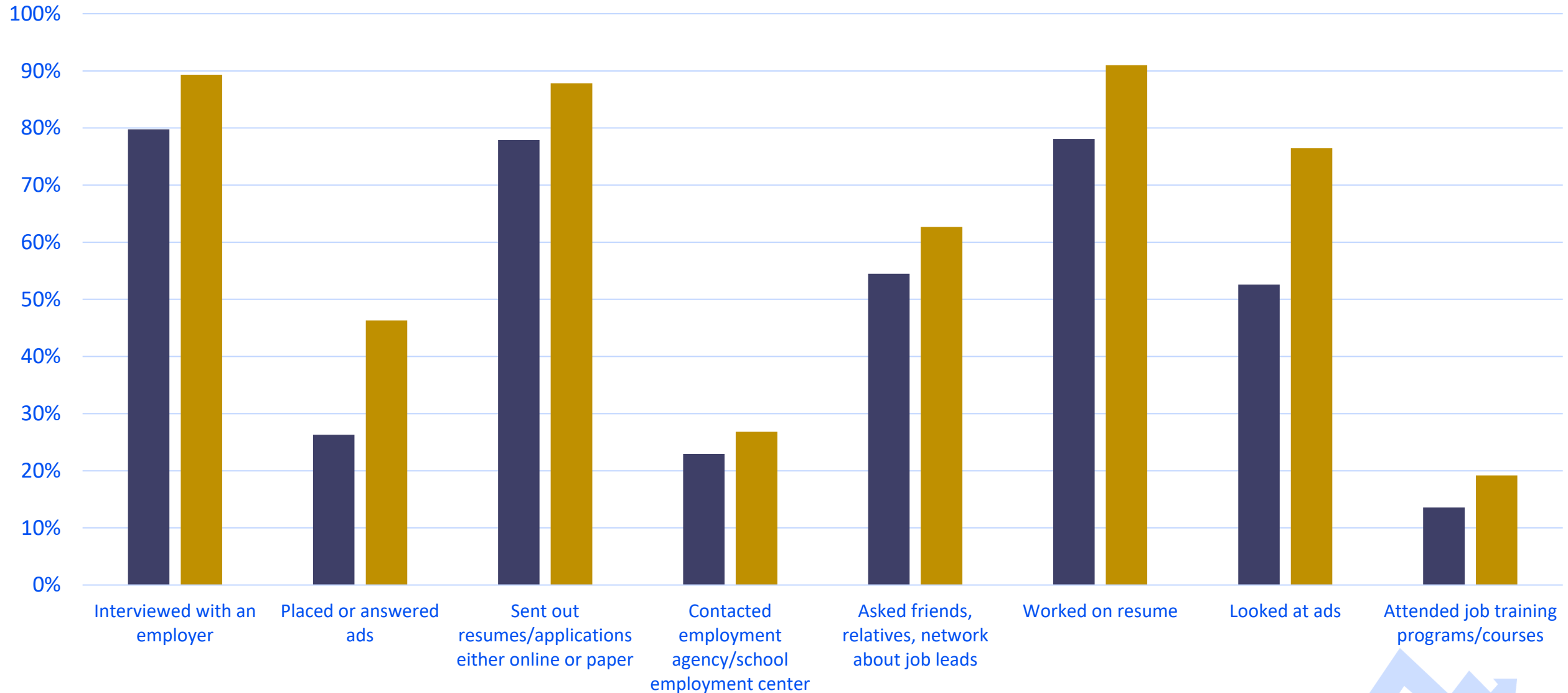
Think back to **the last time** you looked for work.

Select All	Forced Choice
What are all of the things you did to find work? <i>Select all that apply.</i>	Indicate whether or not you did each of the following things to find work. <i>Yes/No</i>

1. Interviewed with an employer
2. Placed or answered ads
3. Sent out resumes/applications either online or paper
4. Contacted employment agency/school employment center
5. Asked friends, relatives, network about job leads
6. Worked on resume
7. Looked at ads
8. Attended job training programs/courses
9. Other (please specify)



Work Results



Work: Data Quality

	SA	FC	Sig.
Whole question missingness	4.8%	5.3%	n.s.
All “no” responses	(4.8%)*	0.8%	p<.05
Item missingness	N/A	0.6%	

*proxy for “none of the above”



Behavioral Question 2: Apps

Select All

Which of the following mobile apps have you used in the past 12 months to purchase goods or services? *Select all that apply.*

Forced Choice

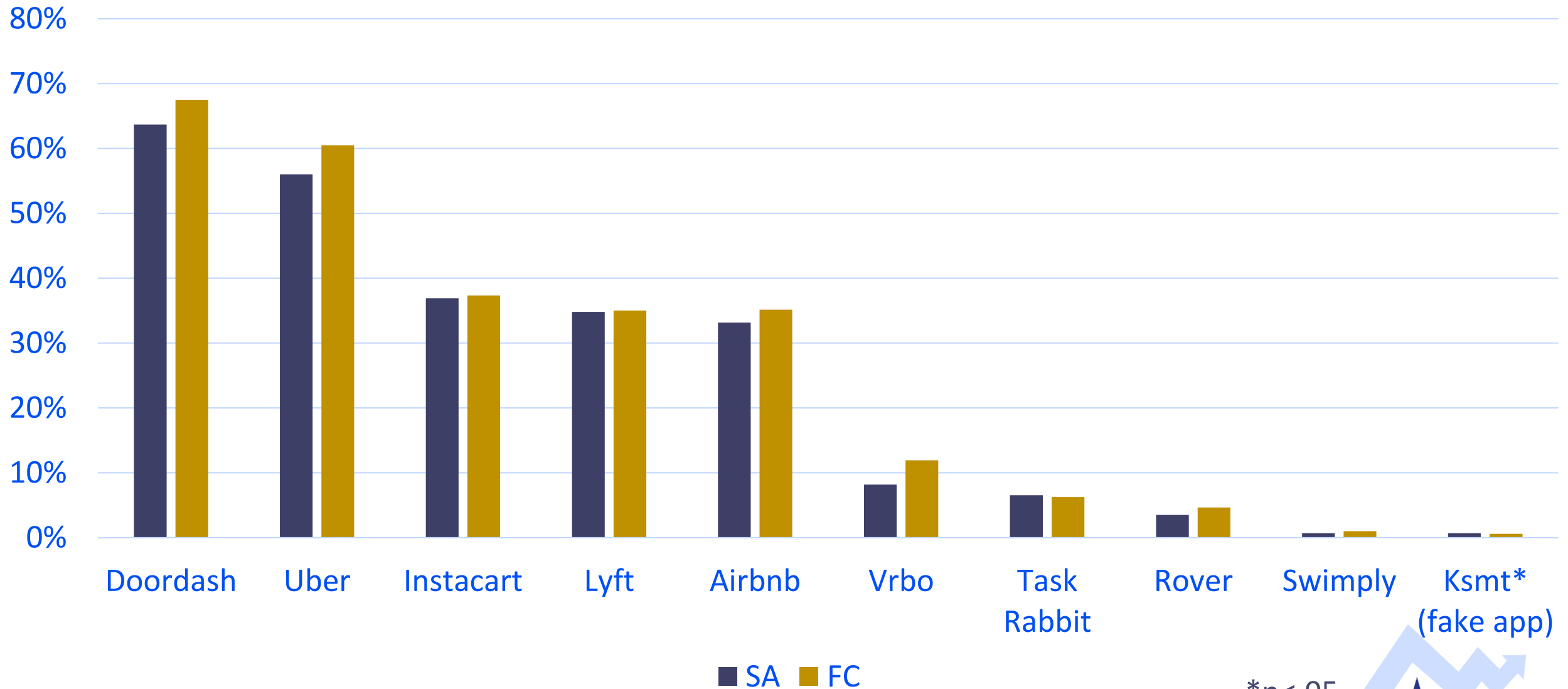
Indicate whether or not you have used each of the following mobile apps in the past 12 months to purchase goods or services. (Yes/No)

Order randomized

1. Uber
2. Instacart
3. Task Rabbit
4. Doordash
5. Lyft
6. Airbnb
7. Rover
8. Swingly
9. Vrbo
10. Ksmt* (fake app)



Apps Results



*p<.05



Apps: Data Quality

	SA	FC	Sig.
Whole question missingness	14.9%	1.0%	p<.05
All “no” responses	(14.9%)*	16.0%	n.s.
Item missingness	N/A	0.8%	

*proxy for “none of the above”



Factual Question: Appliances

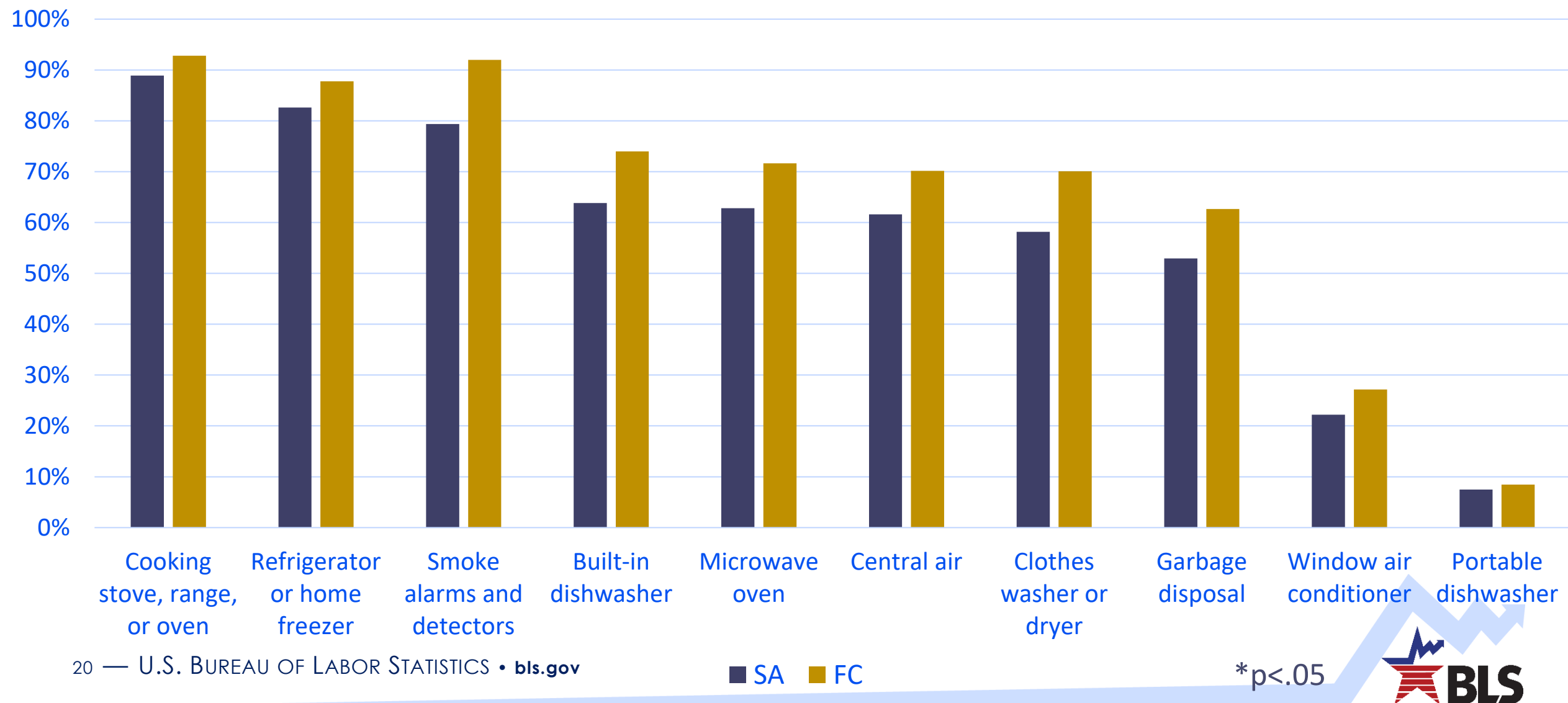
Select All	Forced Choice
Which of the following appliances or equipment were included in your home or rental? <i>Select all that apply.</i>	Indicate whether or not the following appliances or equipment were included in your home or rental. <i>(Yes/No)</i>

Order randomized

- 1. Cooking stove, range, or oven
- 2. Microwave oven
- 3. Refrigerator or home freezer
- 4. Built-in dishwasher
- 5. Portable dishwasher
- 6. Garbage disposal
- 7. Clothes washer or dryer
- 8. Smoke alarms and detectors
- 9. Window air conditioner
- 10. Central air



Appliances Results



Appliances: Data Quality

	SA	FC	Sig.
Whole question missingness	1.8%	1.0%	n.s.
All “no” responses	(1.8%)*	0.6%	n.s.
Item missingness	N/A	0.6%	

*proxy for “none of the above”



Attitude Question: Surveys

Select All

Which of the following statements reflect how you feel about surveys? *Select all that apply.*

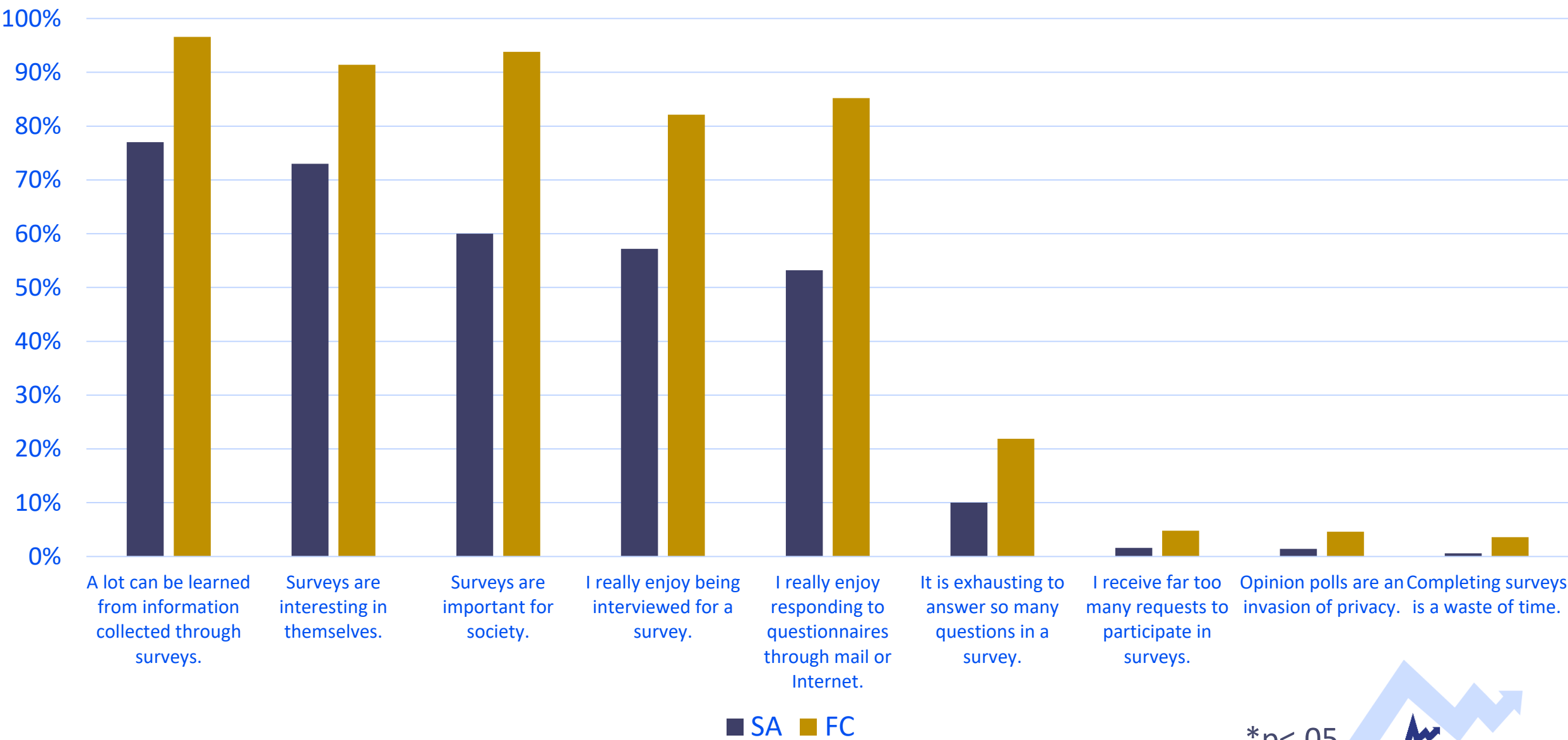
Forced Choice

Indicate whether or not each of statements below reflects how you feel about surveys.
(Yes/No)

Order randomized

1. I really enjoy responding to questionnaires through mail or Internet.
2. I really enjoy being interviewed for a survey.
3. Surveys are interesting in themselves.
4. Surveys are important for society.
5. A lot can be learned from information collected through surveys.
6. Completing surveys is a waste of time.
7. I receive far too many requests to participate in surveys.
8. Opinion polls are an invasion of privacy.
9. It is exhausting to answer so many questions in a survey.

Survey Results



Survey Attitudes: Data Quality

	SA	FC	Sig.
Whole question missingness	0.8%	1.0%	n.s.
All “no” responses	(0.8%)*	0.0%	n.s.
Item missingness	N/A	0.4%	

*proxy for “none of the above”



Respondent Burden

- SA Median Time: **3.5** minutes
 - ▶ Range 0.5 to 69.8 min
- FC Median Time: **3.9** minutes*
 - ▶ Range 0.9 to 101.5 min
- Difference of ~25 seconds

* $p = .001$

Research Questions

- Does question format (SA vs. FC) affect level of endorsement?
 - ▶ Yes!
- Does question type moderate the level of endorsement?
 - ▶ Also, yes!
- Does question format impact data quality (i.e., whole question and item-level missingness)?
 - ▶ We saw similar levels of data quality across both question formats (slightly less missingness for FC)
- Are there differences in burden (i.e., time spent on survey) by question format?
 - ▶ Yes, FC was associated with more burden

Takeaways & Limitations

■ Takeaways

- ▶ For short attitude surveys, FC question formats may be preferred for better data quality
- ▶ For behavioral or factual questions that are likely to be low frequency, SA question formats may be preferable to save respondent burden

■ Limitations

- ▶ Nonprobability sample
- ▶ Do not know “true value”
- ▶ No paradata available on device type used
- ▶ No individual question page timings available

Future Directions

■ Next steps:

- ▶ Important to replicate with additional question types/topics:
 - Include other question types (e.g., hypothetical)
- ▶ Assess subjective and objective burden (time on page and total time on survey)
- ▶ Limit to only desktop users
- ▶ Add 'None of the above' option for SA condition

Contact Information

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