UX Research

Lesson 8: Survey Design

The Erdős Institute

Consumer Insights

- Customer experience as a whole
- Examples
  - Evaluating customer experience (VoC, emotions, brand perception, satisfaction)
  - Evaluating customer behaviors (expectations, aversions, drivers)
  - Understanding loyalty behaviors (likelihood to keep using the product, recommendations to others)
  - Understanding physical products (comparing products in retail and hospitality space)

Survey Design

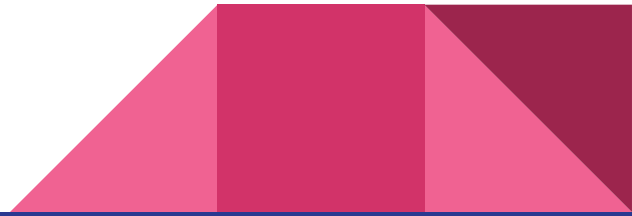
Surveys can be used to measure:

- Brand / company awareness (market research)
- Comparison with competitors (market research)
- Interest in new product directions (market research)
- Product usage (UX)
- Product feasibility (UX)
- Attitudes about the product (consumer insights)
- Loyalty behaviors (consumer insights)

Survey Design

Surveys should ideally be:

- Short
- Easy to understand
- Free from jargon
- Motivating (not boring)

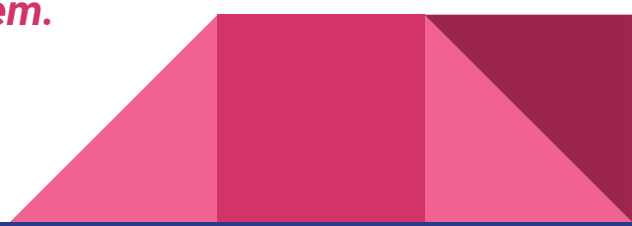


Survey Design

Surveys should ideally be:

- Short
- Easy to understand
- Free from jargon
- Motivating (not boring)

Participants are people, and most likely are people who have not thought about your study nearly as much as you have. Most often, they don't want complicated terms or nuanced instructions and you don't need that kind of information from them.



Step 1. Define area of inquiry

How engaged are people when using my app?

Success?

Completion?

Positive referrals?

More money in purchases?

Making a single purchase?

All these definitions of **engagement** require different methodological designs and different data analyses

Step 1. Define area of inquiry

Does prior theory inform your work?

- May want to use constructs as defined by previous scholars
- Can look at psychometric validity and generalizability of different operationalizations and measurement scales
- More likely to use inferential statistical methods

Step 1. Define area of inquiry

Do you know what you expect at all?

Sometimes, it's not possible. If it's March 2020 and you're studying the ***effect of the coronavirus pandemic on retail shopping***, you might not have directional hypotheses because there hasn't been a worldwide pandemic that has coincided with high usages of personal technology during a U.S. election year before now.

Step 1. Define area of inquiry

Conduct focus groups or interviews before designing your survey

- Helps you learn if you're asking the wrong questions
- Can help you clarify the best question wording

Step 2. Form your hypothesis

Theory

Product A isn't as easy to understand as Products B and C.

Why do you think that?

Product A sales are ½ the size of Product B sales and ⅓ the size of Product C sales.

Step 2. Form your hypothesis

- Try to identify possible causes/reasons for the problem
- Focus on problems that you can solve
- The solution should be related to whatever KPI your company identifies

Step 2. Form your hypothesis

Think about main effects and control variables *a priori* and test those as directly as possible.

You will not be able to control for everything or answer everything with one study / hypothesis. That’s okay.

Step 3. Design your survey

- **Introduction**
  Briefly explain study goals, what the results will be used for, and expected duration
- **Screening questions**
  Ensure the participant meets the criteria (e.g., actually uses your service or product)
- **Main questions**
  Questions addressing the main area of interest.
  Group related questions together under a heading
- **Demographics**
  Age, gender, income
  These should be optional questions
- **Debrief**
  “Is there anything else you think we should know?”

Step 3. Design your survey

- Multiple Choice – nominal data
- Multi-Select – nominal data
- Likert Scale – ordinal data
- Rankings – ordinal data
- Sliding Scale – continuous data
- Open Ended – text data

Step 3. Design your survey

Multiple Choice

If given a choice, which product would you like to test?

- ○ Product A
- ◉ Product B
- ○ Product C

Clear selection

Multi-Select

Which of these products would you like to learn more about? Check all that apply.

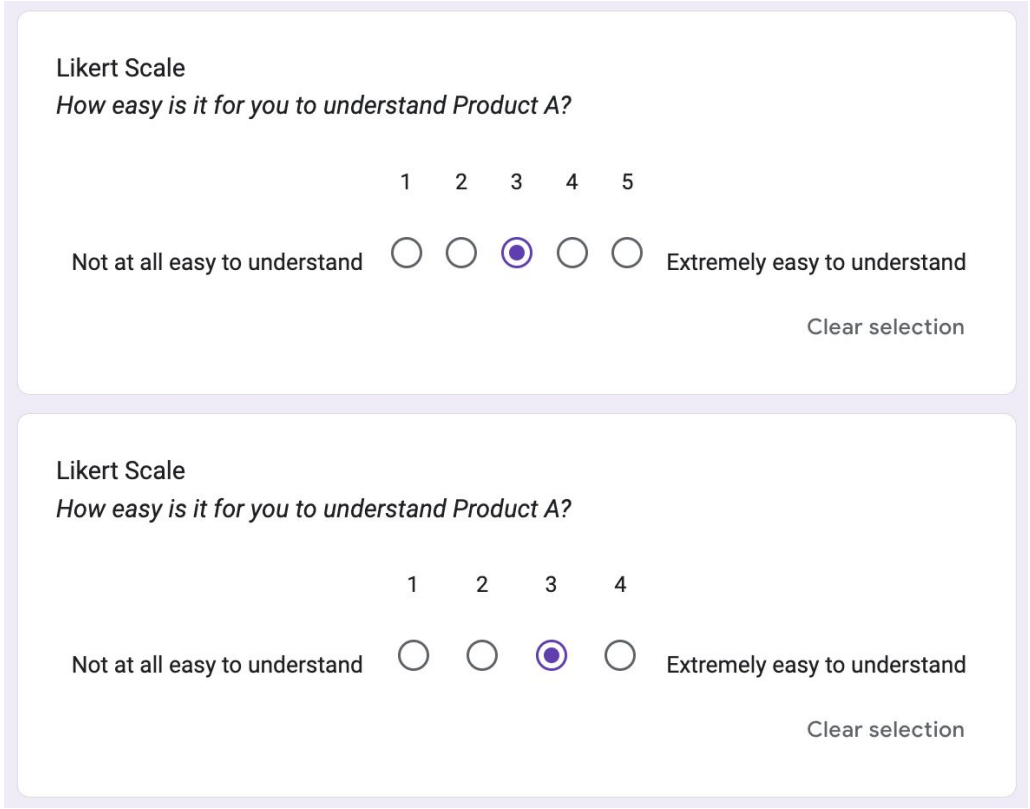
- ☐ Product A
- ☑ Product B
- ☑ Product C

Rankings

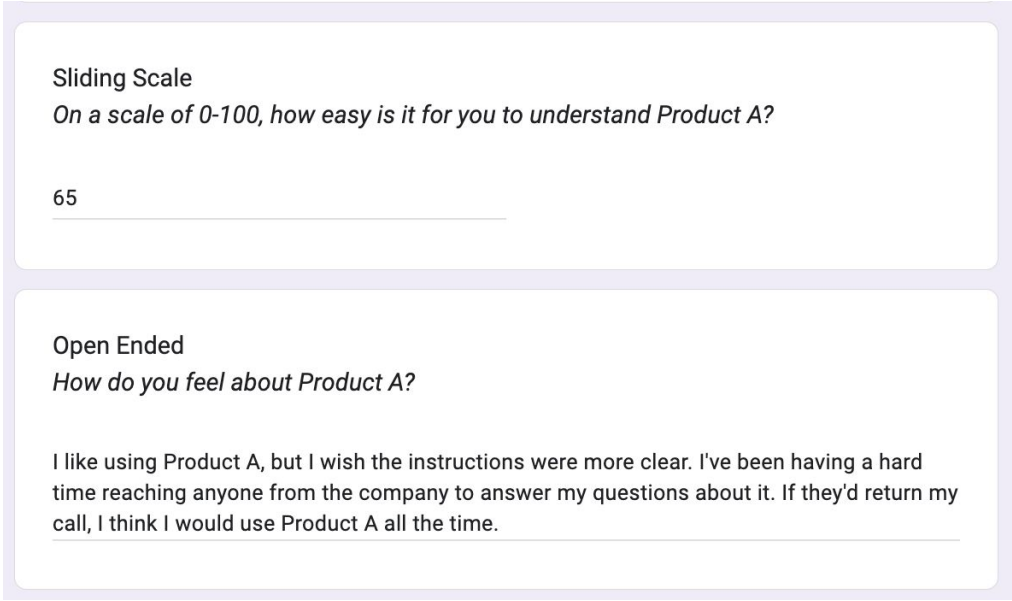
Rank how likely you are to buy Products A, B, and C

	Product A	Product B	Product C
First choice	○	◉	○
Second choice	○	○	◉
Third choice	◉	○	○

Step 3. Design your survey



Step 3. Design your survey



Step 3. Design your survey

Aggregate Rating Scales

How well do these statements describe you from 0 (not at all) to 4 (extremely)?

1. I often have tender, concerned feelings for people less fortunate than me
2. Sometimes I don't feel very sorry for other people when they are having problems. (R)
3. When I see someone being taken advantage of, I feel kind of protective towards them
4. Other people's misfortunes do not usually disturb me a great deal (R)
5. When I see someone being treated unfairly, I sometimes don't feel very much pity for them (R)
6. I am often quite touched by things that I see happen
7. I would describe myself as a pretty soft-hearted person

Empathy score = sum or average of scores for each question

Step 3. Design your survey

Randomization

- Question order matters
  - Recency and primacy effects
  - Open ended before closed questions (in some cases)

- Questions should be grouped by topic
  - Randomize questions within the block
  - Randomize blocks

UX Research

Lesson 9: A/B Testing

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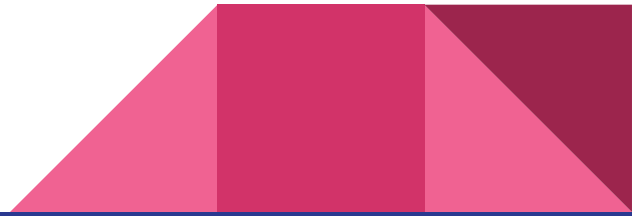
A/B Testing

- A/B tests are the most basic kind of randomized controlled experiments

- Goals
  - Test effectiveness of website pages, mobile app design
  - Get more revenue from the same amount of web traffic

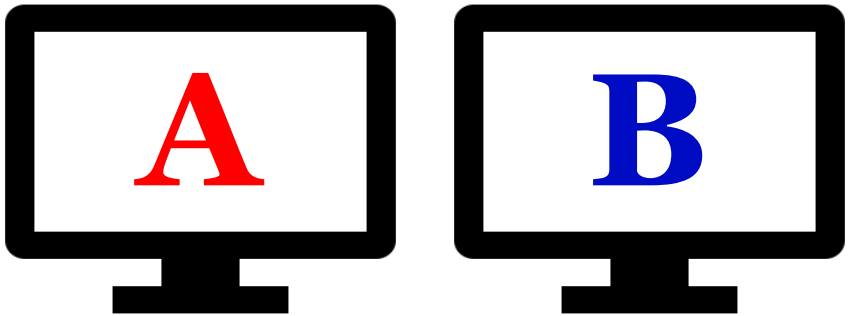
- Different types of A/B testing
  - Classic
  - Split tests/redirect tests
  - Multivariate tests



A/B Testing

Hypothesis

The submit button is **red**. I expect that having a **blue** button would result in increased purchases, perhaps because it stands out more to color-blind shoppers.



Sequential vs. Multivariate Testing

- **Sequential testing**
  - *Test ONE variable per experiment. Run many experiments.*

- **Multivariate testing**
  - *Test MULTIPLE variables at the same time.*

Sequential vs. Multivariate Testing

Sequential testing

Test ONE variable per experiment. Run many experiments

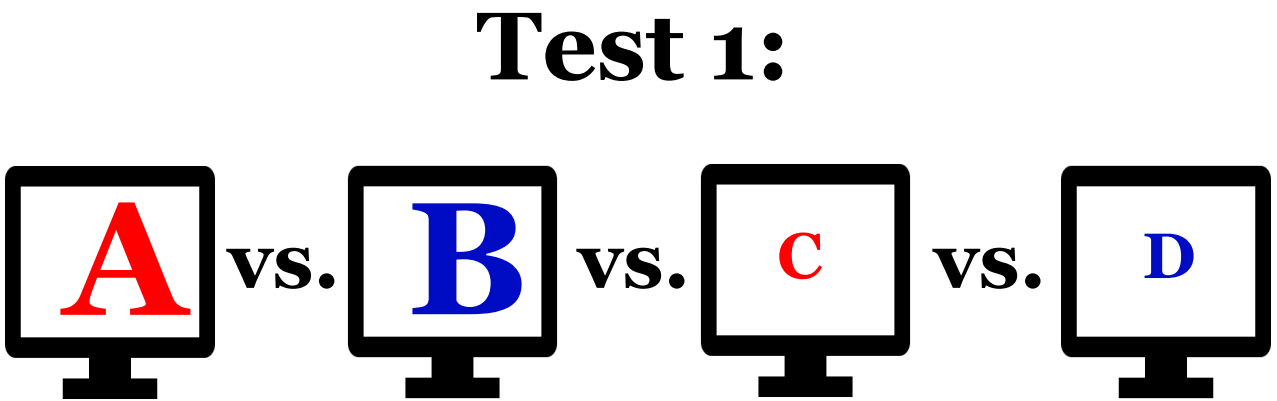
Test 1:

Test 2:

Sequential vs. Multivariate Testing

Multivariate testing

Test MULTIPLE variables at the same time.



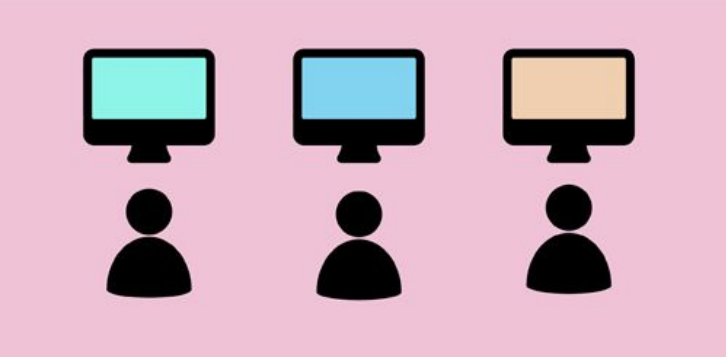
Sequential vs. Multivariate Testing

Sequential Tests	Multivariate Tests
Pros	**Pros**
• Can investigate causality (if approached correctly)	• Can find the best combination/interaction of features • Saves time (which, in business, is money)
Cons	**Cons**
• Cannot investigate interactions among features: can be led to the wrong conclusion • Takes a long time	• Cannot make any causal inferences about features • Need more people (usually)

Dependent vs. Independent Groups

Independent Groups (Between—Subjects Design)

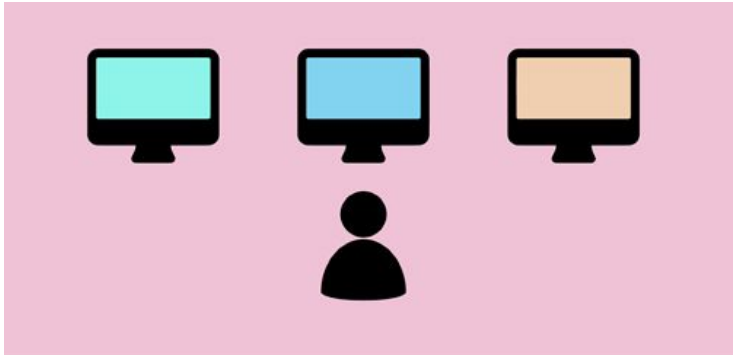
- *Different groups of people see A and B*
- *People are unrelated*



Dependent vs. Independent Groups

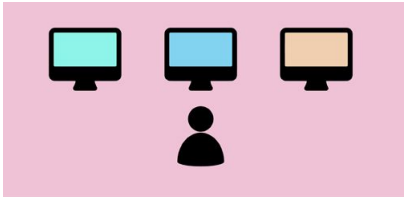
Dependent Groups (Within—Subjects Design)

- *The same person sees A and B*
- *Husband vs. Wife*
- *Person sees A, then later also sees A*

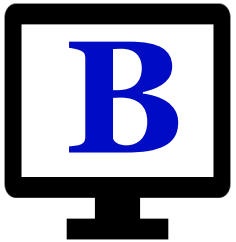


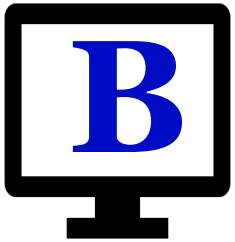
Counterbalancing

Dependent Groups (Within—Subjects Design)



Group 1: 

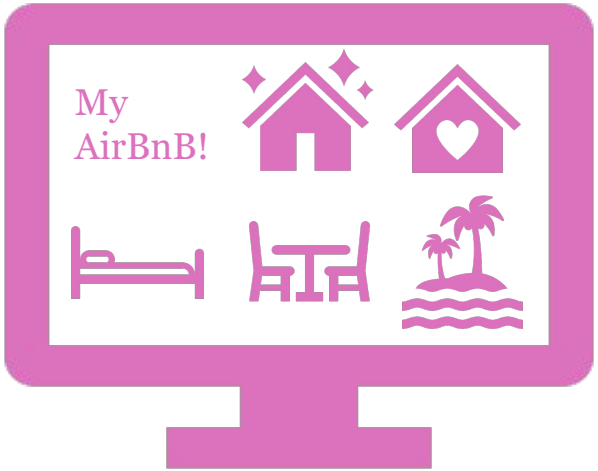
then 

Group 2: 

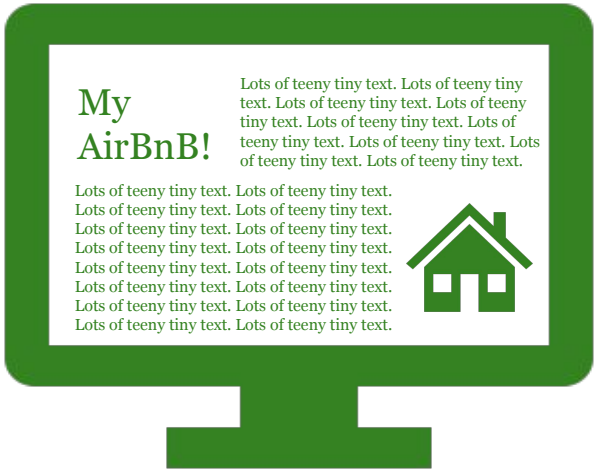
then 

How likely are you to rent an AirBnB in July?

Website A (5 pictures)

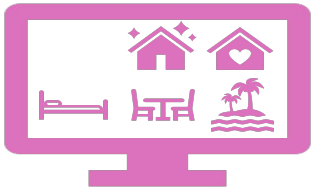


Website B (1 picture)



How likely are you to rent an AirBnB in July?

Website A (5 pictures) *vs.* *Website B (1 picture)*



- Let's say that, for the sake of this example, we are 100% sure that Website A is always preferred to Website B.
- People who see Website A are more likely to rent the AirBnB in Florida in July.

How likely are you to rent an AirBnB in July?

Groups

People in Group A just randomly happen to love hot weather whereas people in Group B randomly hate hot weather

Group A

Group B

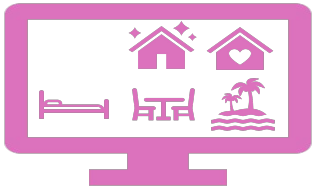
How likely are you to rent an AirBnB in July?

What we know

1. People like the design of Website A more than Website B.

2. People in Group A are more likely to rent than people in Group B.

Website A



Website B

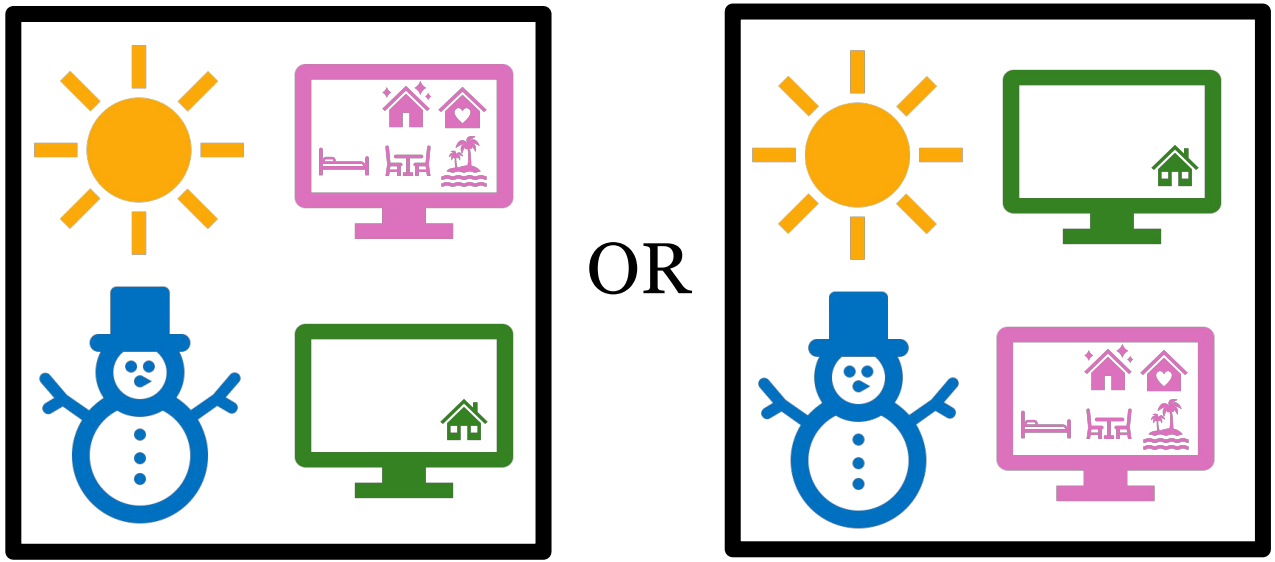
Group A

Group B

How likely are you to rent an AirBnB in July?

Independent Groups

People who *love* hot weather see Website A OR Website B.
People who *hate* hot weather see the other website.



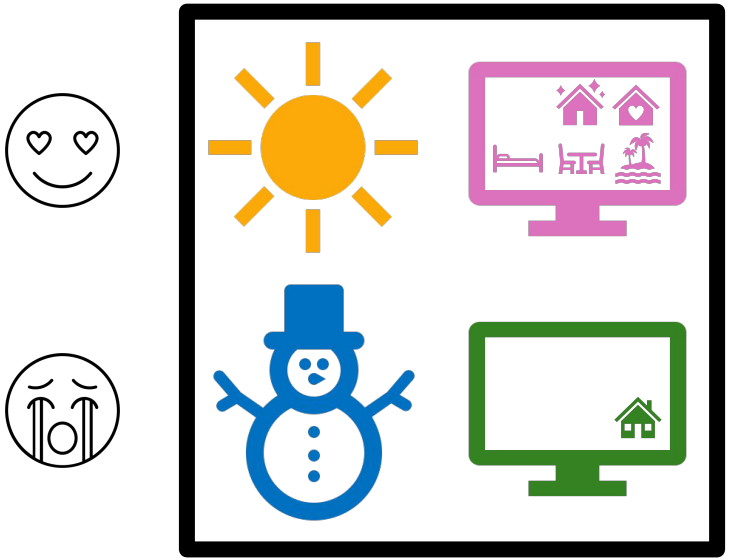
How likely are you to rent an AirBnB in July?

Independent Groups

Possible Results

- **We get the expected result!**

People who saw Website A were more likely to rent the AirBnB than people who saw Website B



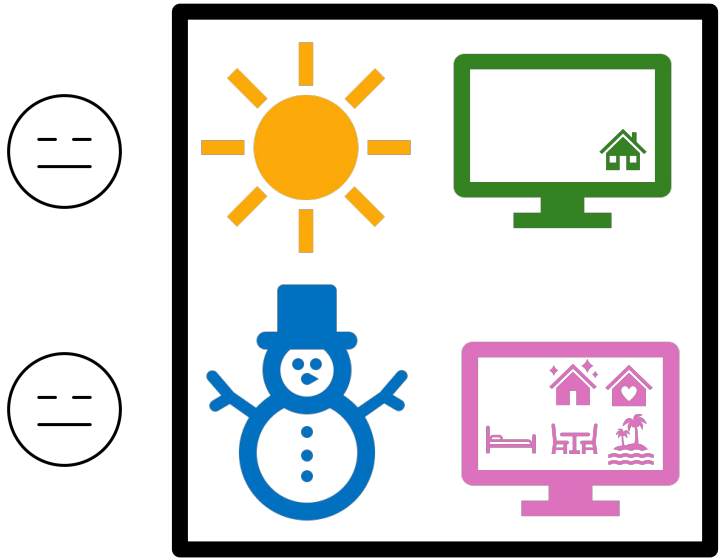
How likely are you to rent an AirBnB in July?

Independent Groups

Possible Results

- **The two factors cancel each other out (incorrectly fail to reject the null hypothesis).**

There is no difference in rentals between people who saw Website A vs. Website B.



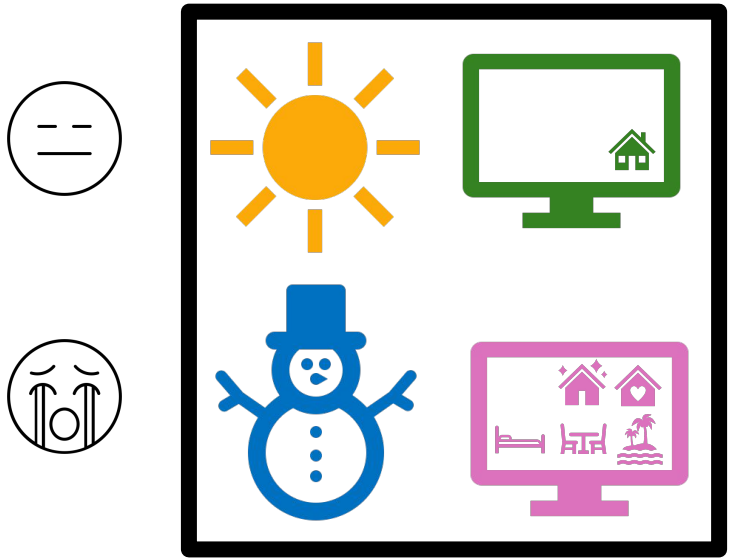
How likely are you to rent an AirBnB in July?

Independent Groups

Possible Results

- **False result.**

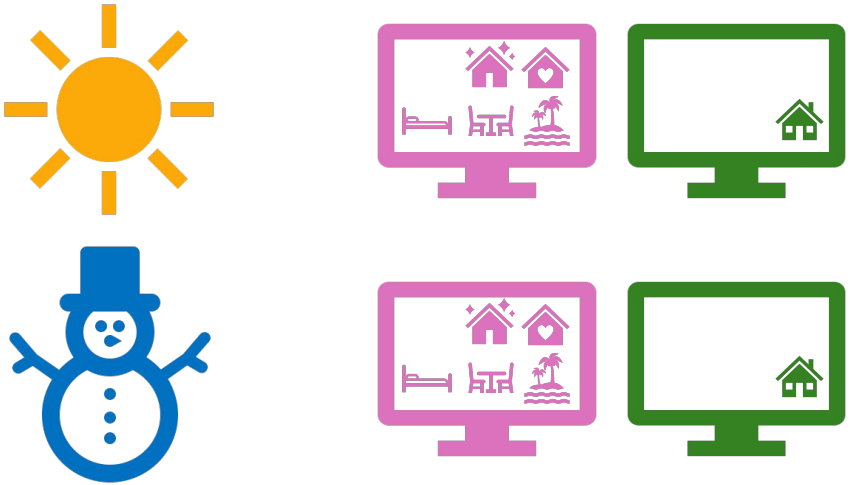
  No one in Group B wants to go to Florida at all, so Website B results in more rentals than Website A



How likely are you to rent an AirBnB in July?

Dependent Groups

People who *love* hot weather see BOTH Website A and Website B.
People who *hate* hot weather see BOTH Website A and Website B.



How likely are you to rent an AirBnB in July?

Dependent Groups

Possible Results

People in both Groups A and B will be MORE likely to rent the AirBnB when they see Website A than when they see Website B.

How likely are you to rent an AirBnB in July?

Dependent Groups

Possible Results

People in both Groups A and B will be MORE likely to rent the AirBnB when they see Website A than when they see Website B.

Reduced noise in data = increased likelihood of finding the *true result* (Website A > Website B)

*Using dependent groups helps **control for** people's weather preferences.*

What can you really understand from hypothesis testing?

It depends on how you designed your experiment!