

Survey used for discrete choice experiment


The survey was implemented in Qualtrics, with 100 questions generated for each delivery scenario. This document represents an abbreviated set of the questions shown in the survey.

Participants were recruited via the Prolific platform.

Participant requirements:


- At least 18 years of age
- US resident
- English fluency


Preview of description shown to potential participants on the Prolific platform



Deliveries, drones, and privacy

By mit.edu

 \$1.00 • \$12.00/hr

 5 mins

First, we'll ask about your behavior as a consumer and how often you have certain kinds of products delivered.

Then, we'll describe a hypothetical scenario where products can be delivered either by ground vehicle or drone.

There will then be a series of questions where we ask you to imagine that you ordered a certain product for delivery to your home. You will be presented with multiple delivery options and asked to choose your preferred option.




Please only take this survey if you are ready to truly imagine these hypothetical scenarios! We want to learn about your true preferences.

We then ask basic demographic questions. No private information is requested.

Participants who fail attention checks may be rejected.

Payment will otherwise be provided within 3 days.

Devices you can use to take this study:

 Desktop  Mobile  Tablet

Survey

Italicized text is used for information about the survey, not shown to participants. Horizontal lines indicate page breaks between questions shown to participants.

Introduction

About this survey

This survey is part of an MIT scientific research project studying how U.S. consumers value various delivery options.

Questions

We will ask about your preferences as a consumer and ask some basic demographic questions.

Study participation

This survey should take you 4 - 7 minutes.

Your decision to complete this survey is voluntary. There is no way for us to identify you. The only information we will have, in addition to your responses, is the time at which you completed the survey. The results of the research may be presented at scientific meetings or published in scientific journals. Clicking to continue indicates that you are at least 18 years of age and agree to complete this survey voluntarily.

[continue button]

What is your Prolific ID? Please note that this response should auto-fill with the correct ID

[text field]

Attention check

21

Please select the number shown.

- ☐ 22
- ☐ 1
- ☐ 21
- ☐ 12

Survey logic: If value is not 21, failed attention check and redirected to end of survey.

Consumer behavior questions

How often (on average) do you make online shopping purchases ?

- ☐ More than once a week
- ☐ Multiple times a month
- ☐ About once a month
- ☐ Once in a few months or longer
- ☐ Never

How often (on average) do you have take-out food delivered to your home?

- ☐ More than once a week
- ☐ Multiple times a month
- ☐ About once a month
- ☐ Once in a few months or longer
- ☐ Never

How often (on average) do you purchase your groceries online?

- ☐ More than once a week
- ☐ Multiple times a month
- ☐ About once a month
- ☐ Once in a few months or longer
- ☐ Never

Attention check

How closely are you paying attention? This is an attention check. Select all choices to this question to pass the check.

- ☐ More than once a week
- ☐ Multiple times a month
- ☐ About once a month
- ☐ Once in a few months or longer
- ☐ Never

Survey logic: If not all items selected, failed attention check and redirected to end of survey.

[shown if answered 'Never' to question about take-out order frequency]

What are your reasons for never ordering take-out food for delivery to your home?
(Select all that apply)

- ☐ I prefer the in-store experience
 - ☐ I want to avoid potential delivery fees or added cost
 - ☐ I want to avoid potential delays
 - ☐ Other: _____
-

Suppose there is a company that specializes in delivering prescription medications and offers service in your area, and the total price is similar to local pharmacies. If you needed prescription medications, would you ever order them from this company for delivery to your home?

- ☐ Yes
 - ☐ No
 - ☐ I don't know
-

[shown if answered 'No' to previous question]

What are your reasons for never ordering medications from a prescription medications delivery service for delivery to your home?
(Select all that apply)

- ☐ I prefer the in-store experience
 - ☐ I want to avoid potential delivery fees or added cost
 - ☐ I want to avoid potential delays
 - ☐ Other: _____
-

Would you ever order items from a liquor store for delivery to your home?

- ☐ Yes
 - ☐ No
 - ☐ I don't know
-

[shown if answered 'No' to previous question]

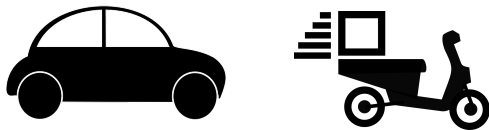
What are your reasons for never ordering products from a liquor store for delivery to your home?
(Select all that apply)

- ☐ I prefer the in-store experience
 - ☐ I want to avoid potential delivery fees or added cost
 - ☐ I want to avoid potential delays
 - ☐ Other: _____
-

Delivery alternatives

In the next series of questions we would like you to compare two hypothetical options where you order items for delivery to your home.

While the scenarios are hypothetical, please answer them as if you were truly presented with the scenario.



Delivery option 1: Ground vehicle

This option is however you typically have items delivered in your neighborhood currently (e.g., delivery by car or bike).



Delivery option 2: Drone

In addition, companies offer delivery via drone.

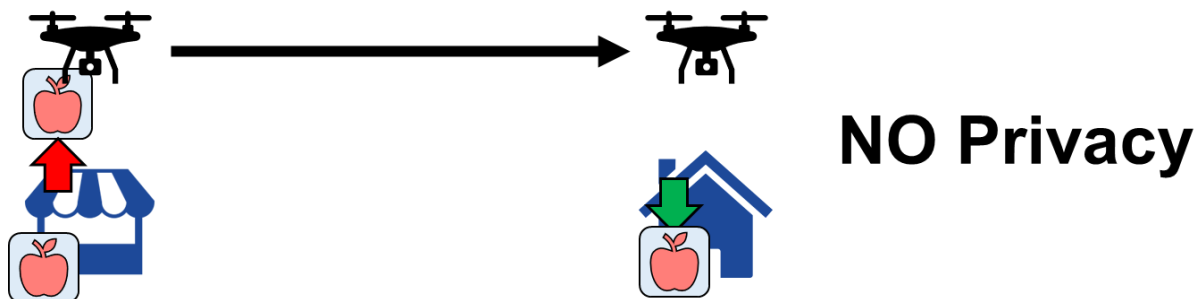
Privacy for drone deliveries

Drone deliveries sometimes introduce privacy concerns because safety regulations require drones to broadcast their locations.

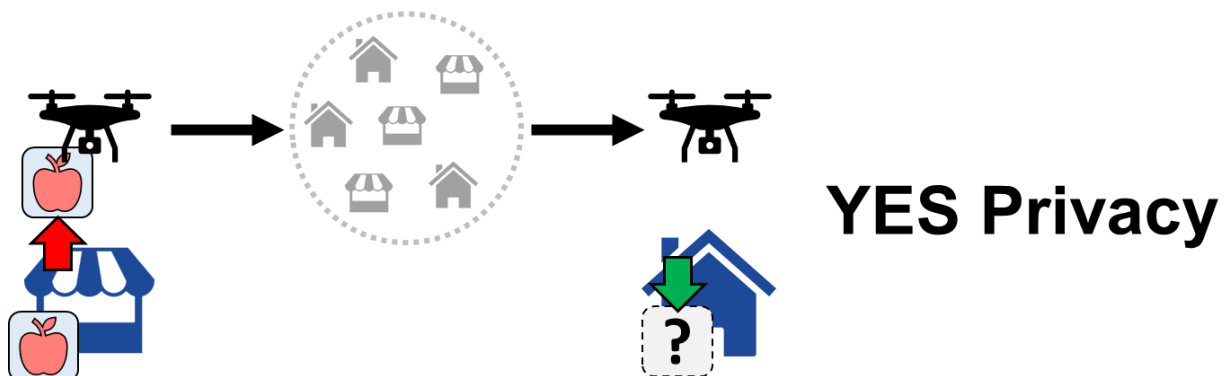
What this means for you as a consumer

This means that third parties can see that drones went from specific storefronts to your home when making deliveries. This can potentially allow other people and companies to learn which kinds of products were sent to you.

For example, if a drone visits a store that sells apples and then visits your address, someone can conclude that you ordered from the store that sells apples.



On the other hand, if the drone makes other stops before your address, only the delivery company and/or the store you purchased from can know your order for sure. However, this added privacy may come at additional cost or require additional delivery time.



In the following questions, we use "NO privacy" to refer to the first case and "YES privacy" to refer to the second case.

Participants are next shown a series of choice questions. Choice sets were generated using efficient experimental design methods. They were arranged into blocks, where each block contains a random subset of 100 choice questions for a single vendor type. Each such choice set is preceded by a page that introduces the participant to the choice scenario for the corresponding vendor type. Choice questions are then shown one at a time on separate pages.

For each vendor type, the corresponding choice set questions are only shown to a participant if they indicated they would order items for delivery from that vendor type in the earlier questions. If the participant indicated they would order delivery from only 1 vendor type, then they are shown a random subset of 12 questions for that 1 vendor, and no questions for any other vendor. Otherwise, the participant is shown a random subset of 3 questions for each vendor type that they indicated they would order from.

The order in which the vendor type specific blocks are presented to the participant is randomized.



For brevity, only 1 of the 100 choice questions from the choice set block is shown for each vendor type in the following survey preview.

Vendor type: Take-out food

Take-out food delivery

Imagine you order take-out food for delivery to your home. You can have it delivered by ground vehicle or drone. Using drone delivery with no privacy may allow a third party to learn that you ordered take-out from a specific restaurant.

Suppose you order take-out food for delivery to your home.
Given the following delivery options, which would you prefer?

Option	 Ground vehicle	 Drone
Delivery fee	\$5	\$5
Delivery wait time	45 minutes	45 minutes
Privacy	N/A	YES privacy

Preference



Ground vehicle





Drone

Vendor type: Prescription medications

Medications delivery

Imagine you order medications from a company that specializes in delivering prescription medications. You can have the delivery made by ground vehicle or drone. Using drone delivery with no privacy may allow a third party to learn that you ordered medications from this service.

Suppose you order prescription medications for delivery to your home.
Given the following delivery options, which would you prefer?

	 Ground vehicle	 Drone
Option		
Delivery fee	\$10	\$10
Delivery wait time	1 day	6 hrs
Privacy	N/A	YES privacy

Preference



Ground vehicle



Drone



Vendor type: liquor store

Liquor store delivery

Imagine you order items from a liquor store for delivery to your home. You can have the delivery made by ground vehicle or drone. Using drone delivery with no privacy may allow a third party to learn that you ordered items from a liquor store.

Suppose you order items from a liquor store for delivery to your home.

Given the following delivery options, which would you prefer?

Option	 Ground vehicle	 Drone
Delivery fee	\$5	\$5
Delivery wait time	45 minutes	45 minutes
Privacy	N/A	NO privacy

Preference



Ground vehicle



Drone

Vendor type: last-minute groceries



Last-minute groceries delivery

Imagine you need last-minute groceries and order them from a service specializing in last-minute grocery delivery. For example, companies like [Gorillas](#) and [Getir](#) operate in the U.S. and advertise grocery delivery within minutes of ordering.

You can have the delivery made by ground vehicle or drone. Using drone delivery with no privacy may allow a third party to learn that you used a grocery delivery service.

Suppose you order last-minute groceries for delivery to your home.

Given the following delivery options, which would you prefer?

Option	 Ground vehicle	 Drone
Delivery fee	\$5	\$5
Delivery wait time	45 minutes	45 minutes
Privacy	N/A	NO privacy



Preference ☐ ☐

Ground vehicle Drone

Attention check

Suppose this is an attention check.

Given this is an attention check, can you please choose both options below?

Option	 Choose me	 Choose me
Delivery fee	\$0	\$0
Delivery wait time	N/A minutes	N/A minutes
Privacy	N/A	N/A privacy

Preference ☐ ☐

Ground vehicle Drone

Demographic questions block

What is your gender?

- ☐ Male
- ☐ Female
- ☐ Other
- ☐ Prefer not to say

Choose one or more races that you consider yourself to be:

- ☐ White
- ☐ Black or African American
- ☐ American Indian or Alaska Native
- ☐ Asian
- ☐ Native Hawaiian or Pacific Islander
- ☐ Hispanic or Latino
- ☐ Other

What is your age?

- ☐ 18 - 24 years
- ☐ 25 - 34 years
- ☐ 35 - 44 years
- ☐ 45 - 54 years
- ☐ 55 - 64 years
- ☐ 65 and older

What was your entire household income in the previous year before taxes? Please give your best guess.

- ☐ Less than \$25,000
- ☐ \$25,000 to \$49,999
- ☐ \$50,000 to \$74,999
- ☐ \$75,000 to \$99,999
- ☐ \$100,000 to \$149,999
- ☐ \$150,000 to \$199,999
- ☐ \$200,000 or more

Which best describes where you live?

- ☐ Urban
- ☐ Suburban
- ☐ Rural
- ☐ I don't know

What type of residence do you live in?

- ☐ Private home
- ☐ Apartment
- ☐ Other: _____

In which state do you currently reside?

[drop down listing all 50 states, DC, Puerto Rico]

Thank you for taking the survey. When you continue you will be redirected to Prolific and your submission will be recorded.

Do you have any extra comments? Was anything unclear? (optional)

[optional text field]

[end of survey]