Survey Instrument

<Consent Form>

Prolific ID and Captcha

1. What is your Prolific ID? Please note that this response should auto-fill with the correct ID. *[Asked for preventing duplicate participation and for payment purposes]*

2. Before you proceed to the survey, please complete the captcha below. *[Asked to prevent bots]*

Phase one Questionnaire

1. Are you proficient in English?
   - ○ Definitely yes
   - ○ Probably yes
   - ○ Might or might not
   - ○ Probably not
   - ○ Definitely not

2. Do you have a degree in Computer Science, including a "minor," or any professional computer science certifications?
   - ○ Yes
   - ○ No

3. Do you use any smart IoT devices (e.g., smart thermostat, smart home camera, smart lightbulb) in your household?
   - ○ Yes
   - ○ No
   - ○ I do not know what a smart IoT device is

4. (If Yes to #3) How many smart IoT devices do you have in your household?
   - ○ 1 – 2
   - ○ 3 – 5
   - ○ More than 5

5. (If Yes to #3) What types of smart IoT devices do you use in your household?
Please select all that apply.
   - ☐ Smart thermostat
   - ☐ Smart speaker with a voice assistant (e.g., Google Home, Amazon Alexa)
   - ☐ Smart toothbrush
   - ☐ Indoor smart home security camera
   - ☐ Smart doorbell camera
   - ☐ Smart lightbulb with motion sensor
   - ☐ Smart smoke detector
   - ☐ Smartwatch
   - ☐ Smart TV
   - ☐ Smart lock
   - ☐ Smart switch
   - ☐ Smart plug
   - ☐ Others (Please specify)

6. What type of smart IoT devices that you do not currently own but would be willing to try out if the product is offered to you for free? **Please select all that apply.**
   - ☐ Smart thermostat
   - ☐ Smart speaker with a voice assistant (e.g., Google Home, Amazon Alexa)
   - ☐ Smart toothbrush

- ☐ Indoor smart home security camera
- ☐ Smart doorbell camera
- ☐ Smart lightbulb with motion sensor
- ☐ Smart smoke detector
- ☐ Smartwatch
- ☐ Smart TV
- ☐ Smart lock
- ☐ Smart switch
- ☐ Smart plug
- ☐ Others (Please specify)

Technical Knowledge of Privacy Tools Scale (Kang et al. (2015)):

Please indicate whether you think each statement is true or false. Please select "I am not sure" if you do not know the answer.

	True	False	I am not sure
Incognito mode / private browsing mode in browsers prevents websites from collecting information about you.		√	
Tor can be used to hide the source of a network request from the destination.	√		
A VPN is the same as a Proxy server.		√	
IP addresses can always uniquely identify your computer.		√	
HTTPS is standard HTTP with SSL to preserve the confidentiality of network traffic.	√		
A request coming from a proxy server cannot be tracked to the original source.		√	

Demographic Questions:

1. What is your age (in years)?
2. What is your gender?
   - O Woman
   - O Man
   - O Non-binary
   - O Prefer not to disclose
   - O Prefer to self-describe _____

3. What is the highest level of education you have received?
   - O Less than high school
   - O High School graduate or GED
   - O Some College
   - O 2-year degree
   - O 4-year degree
   - O Master's degree
   - O Doctoral degree
   - O Professional degree
4. Which of the following options best describes your current employment status?
   - O Employed full time
   - O Employed part time
   - O Self-employed
   - O Care-provider
   - O Homemaker

- ○ Retired
- ○ Student
- ○ Disabled
- ○ Unemployed, not looking for work
- ○ Unemployed, looking for work
- ○ Other _____

5. Which of these describes your personal income last year?
- ○ $0
- ○ $1 to $9,999
- ○ $10,000 to $24,999
- ○ $25,000 to 49,999
- ○ $50,000 to 74,999
- ○ $75,000 to 99,999
- ○ $100,000 to 149,999
- ○ $150,000 and greater
- ○ Prefer not to answer

Phase two Questionnaire

IoT Marketplace Attitude:

1. Did you ever visit an online IoT marketplace or physical stores (e.g., Amazon or any other website that sells IoT devices, Walmart, Bestbuy) with an intention to purchase a smart IoT device for your household (even if you did not buy the device)?

- ○ Yes
- ○ No

2. (If Yes to #1) What device did you purchase?

3. (If Yes to #1) Based on your experience, how easy or difficult did you find it to make a purchase decision for an IoT product? (1 – Very difficult to 5 – Very easy)

4. (If Yes to #1) Did you find all the information about the device present in the marketplace for you to make an informed purchase decision?

- ○ Yes
- ○ No

5. (If No to #4) What additional information about the smart IoT device should have been provided that could have helped you make a better purchase decision?

Lottery: Controlled Manipulation of Purchase Behavior (Variable: privacy_premium: 9.99$, 19.99$, 29.99$)

Group 1: Smart Home Security Camera:

Thank you for your time in participating in the study. We would like to add you to a lottery pool for a chance to win a smart IoT device as our appreciation. You can win an indoor smart home security camera worth $29.99. **We will select 5 winners randomly from all eligible survey participants who complete the phase two study. Please see below the detailed features of the device that you may win.**

Device: Indoor Pan/Tilt Smart Security Camera

Price: $29.99

Sensors: Video, Audio, Motion/Presence

Device Features and Specifications

Features	
1	Live view 24/7 – 4k Ultra HD video capturing/streaming videos through the app
2	Pan/Tilt: Gesture-based navigation to rotate and set the camera's point of view in real-time, right from the app
3	Dual audio – See, hear, and speak to family, friends, and visitors through the app
4	Real-Time Motion/Sound Detection: Get alerts on your smartphone whenever motion or sound is detected, even at night (30ft). Enable patrol mode on your home security camera system to make the most use of cameras for home security as a pet camera or nanny cam
5	Color night vision – see clearly day and night with CNV. It also supports long-range IR night vision
6	Easy setup with an intuitive app
7	Get alerts in the app when motion is detected
8	Customized motion detection zones based on your needs
9	Wi-Fi-enabled voice control – easy integration with Alexa and Google Assistant, Apple Homekit
10	Powerful two-year battery life
11	Automatic security updates
Specs	
1	**Field of view**: 120-degree diagonal
2	**Camera frame rate**: Up to 30 fps
3	**Photo resolution**: View captured images in 1,920 x 1,080 FHD
4	**Power**: 2 AA 1.5V lithium metal (non-rechargeable) batteries Sync Module 2 power: 100-220V AC to 5V DC converter included
5	**LEDs**: 1 blue LED to help you know when it's active. One red LED when recording in night vision.
6	**Warranty and Service**: 3-year warranty and service included

Premium Data Management plan: The device includes basic cloud data management option without any additional fees. Alongside the basic option, the company also provides a **premium data management plan** option

that includes additional data management features and requires a yearly subscription fee. Please review the features below.

Features	Basic data management plan (free and included with the device price)	Premium data management plan (purchased separately)
Cloud data management: • Automatic cloud data backup • Free cloud storage of 2 TB • View and download cloud data from anywhere	✔	✔
Control over cloud data: • Option to delete data stored in the cloud		✔
Control over data sharing: • Option to opt-out from third-party data sharing by the IoT manufacturer		✔
Control over data usage: • Option to limit the IoT manufacturer from using collected data for any purposes other than for the purpose of device functionality		✔

We offer the following choices (with or without the premium data management plan) for you to enter the pool based on your preferences.

If you select **Option A** and win the lottery, you will receive **the device and the prepaid subscription of the premium data management plan for one year**.

If you select **Option B** and win the lottery, you will receive **the device (included with the basic plan) and the cash amount of \$<privacy_premium>**. Note that, you will not receive the prepaid subscription of the premium data management plan.

Note that the chance of winning is the same for both choices. If you do not wish to enter in the lottery pool, you can select **Option C**.

Please choose one of the following options:

○ **Option A**: Indoor Pan/Tilt Smart Security Camera + 1 year prepaid subscription of the premium data management plan
○ **Option B**: Indoor Pan/Tilt Smart Security Camera with basic data management plan included + \$<privacy_premium> cash amount
○ **Option C**: I do not want to enter in the lottery pool

Group 2: Smart Lightbulb with Motion Sensor:

Thank you for your time in participating in the study. We would like to add you to a lottery pool for a chance to win a smart IoT device as our appreciation. You can win a smart lightbulb with motion sensor worth \$29.99. **We will select 5 winners randomly from all eligible survey participants who complete the phase two study. Please see below the detailed features of the device that you may win.**

Device: Smart Color Changing Light Bulbs [Pack of 4]

Price: $29.99

Sensors: Motion/Presence

Device Features and Specifications

Features	
1	Multi-color LED – Personalize to create any atmosphere
2	Tunable white – soft glow at night to natural white in the morning
3	Hands-free voice control – works with Amazon Alexa, Google Assistant, and Apple Homekit
4	Sync with media – Sync light with music
5	Built-in motion and action sensor - Detects presence in the room, Automate with motion and action triggers
6	Smart timer settings – schedule bulbs to automatically turn ON/OFF
7	App remote control – Wi-Fi enabled
8	Easy setup with an intuitive app
9	App tracks energy consumption
10	Free cloud storage up to 2TB: Review and manage, and delete cloud data from anywhere
11	Automatic security updates
Specs	
1	**Luminous Flux**: 800 Lumen
2	**Type**: LED
3	**Voltage**: 120 Volts
4	**Wattage**: 9 watts
5	**Warranty and Service**: 3-year warranty and service included

Premium Data Management plan: The device includes basic cloud data management option without any additional fees. Alongside the basic option, the company also provides a **premium data management plan** option

that includes additional data management features that requires a yearly subscription fee. Please review the features below.

Features	Basic data management plan (free and included with the device price)	Premium data management plan (purchased separately)
Cloud data management: • Automatic cloud data backup • Free cloud storage of 2 TB • View and download cloud data from anywhere	✔	✔
Control over cloud data: • Option to delete data stored in the cloud		✔
Control over data sharing: • Option to opt-out from third-party data sharing by the IoT manufacturer		✔
Control over data usage: • Option to limit the IoT manufacturer from using collected data for any purposes other than for the purpose of device functionality		✔

We offer the following choices (with or without the premium data management plan) for you to enter the pool based on your preferences.

If you select **Option A** and win the lottery, you will receive **the device and the prepaid subscription of the premium data management plan for one year**.

If you select **Option B** and win the lottery, you will receive **the device (included with the basic plan) and the cash amount of $<privacy_premium>**. Note that, you will not receive the prepaid subscription of the premium data management plan.

Note that the chance of winning is the same for both choices. If you do not wish to enter in the lottery pool, you can select **Option C**.

Please choose one of the following options:

- ○ **Option A**: Smart Color Changing Light Bulbs [Pack of 4] + 1 year prepaid subscription of the premium data management plan
- ○ **Option B**: Smart Color Changing Light Bulbs [Pack of 4] with basic data management plan included + $<privacy_premium> cash amount
- ○ **Option C**: I do not want to enter in the lottery pool

Manipulation Check

1. The company offers a premium data management plan that is sold separately and can be purchased alongside the device.

- ○ True
- ○ False
- ○ I am not sure

Post-Purchase Survey [privacy_premium: $9.99, or $19.99, or $29.99 | device_type: Indoor Smart Home Security Camera, or Smart Lightbulb with Motion Sensor]

1a. *[Text Entry]* (*Who chose the premium data management plan option*) We noticed that you selected the option with the premium data management plan. Please briefly mention your reasoning for choosing this option instead of receiving cash amount of $<privacy_premium>.

1b. *[Text Entry]* (*Who did not choose the premium data management plan option)* We noticed that you selected the option with $<privacy_premium> cash instead of premium data management plan. Please briefly mention your reasoning for choosing this option instead of receiving the premium data management plan.

1c. *[Text Entry]* (*Who chose not to enter the lottery pool option*) We noticed that you chose not to enter the lottery pool. Please briefly mention your reasoning for choosing this option.

2. *[Text Entry]* What do you feel about a premium data management plan sold separately alongside the IoT device price? Please briefly mention your reasoning for or against such a business model. While doing so, please consider both positives and negatives of such an approach and articulate your response based on your considerations.

3. Please indicate the extent to which you agree or disagree with the following statements? **(7-point Likert. Strongly Disagree to Strongly Agree)**

1. The price for the premium data management plan is too high
2. The premium data management plan does not provide any additional protection to my data privacy
3. The device does not collect enough personal data that requires additional premium data management plan
4. The premium data management plan is the company's business strategy to extract more money out of the consumer
5. I am capable of protecting my data privacy on my own hence I do not require an additional premium data management plan
6. Please select "Somewhat Disagree" for this statement *[Attention Check]*
7. I doubt that the company's premium data management plan will do what it says it will do
8. (Who chose premium data management plan) I feel satisfied with my decision to choose the premium data management plan option instead of the cash option
9. (Who did not choose premium data management plan) I feel satisfied with my decision to choose the cash option instead of the premium data management plan option

4. On a scale of 0 to 10, how sensitive do you think the data collected and stored by a <device_type> is? **0: Not at all sensitive; 10: Extremely sensitive. [Slider options]**

5. Do you have any other comments or feedback about the study?
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