Online Appendix for Non-User Utility and Market Power: The Case of Smartphones

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H Additional Demand Experiment: Design and Results

In this section, we describe the additional demand experiment that we conducted around the release of iOS 18 in further detail.

H.1 Sample

We collaborated with College Pulse and Prolific to recruit US iPhone owners, aged between 18 and 25, for our experiments. Our data collection took place in August and September 2024.[1]

Pre-registration Our data collection was pre-registered on AsPredicted (#188626 and #189888) and includes the experimental design, hypotheses, primary and secondary outcomes, sample size, and exclusion criteria.[2] We pool the results across Prolific and College Pulse to maximize power and to reach close to our pre-specified target sample size of 1500.[3] Because the pre-registrations differed slightly across samples, we relaxed the exclusion criteria to ensure the same inclusion rules applied to both.[4]

H.2 Design

H.2.1 Background and BDM explanation

Background information Our survey begins by asking respondents to specify which phone model they currently own. We then inform respondents that after this survey we will hold a lottery about a smartphone and a monetary payment. We then explain to respondents that they can choose to win an iPhone 16 Pro Max or a Galaxy S24 Ultra. Further, they are informed that 1 out of 200 participants will be the winner of the lottery.

[1] We conducted the experiment using College Pulse, CloudResearch, and Prolific. Due to concerns about data quality, we excluded all responses from CloudResearch, as the majority appeared to be bot-generated. The high proportion of bots on CloudResearch cast doubt on the reliability of the remaining responses from that platform, although our results remain consistent even when including responses not explicitly flagged as bots. Similarly, we identified and removed a subset of College Pulse responses flagged as bots. Our final sample consists solely of respondents from College Pulse and Prolific who were not flagged as bots.

[2] For details, see https://aspredicted.org/4tp9-tvzr.pdf and https://aspredicted.org/4ytf-zgwq.pdf.

[3] We used multiple survey providers to increase collection speed as our data collection had to be completed by the end of the iOS 18 launch day on September 16th. At the time of each experiment, we used the latest iPhone model available: the iPhone 15 Pro Max for the College Pulse study and the iPhone 16 Pro Max for the Prolific study. Due to slight differences in pre-registrations across samples, we relax the exclusion criteria to ensure consistent inclusion rules for our two samples.

[4] 29.0% of individuals fail our attention checks.

BDM explanation We then explain the BDM procedure to our respondents. They first choose the phone they like better. Next, we ask them to specify the minimum amount of extra money they would need to switch from their preferred phone to the other one.[5] We emphasize that it is in the respondent's best interest to be truthful about what phone they like better and the extra amount of money they would need to switch. We verify participants comprehension of the BDM mechanism with a simple comprehension question.

Example good To enhance comprehension, we start with a hypothetical example good Dizon-Ross and Jayachandran (2022). We measure respondents' preferences over two laptops (a 16-inch, M2 MacBook Pro and a Lenovo ThinkPad X1 Extreme Gen 4) that are both priced around $2300 and then ask them to specify the minimum amount they would require to switch from their preferred laptop to the other one.

Common information about interoperability issues All respondents are first reminded of the interoperability issues between Androids and iPhones. In particular, respondents are told that Android users do not have access to read receipts or typing indicators and can only send low-quality pictures and videos to iPhones and vice versa. They are further told that the messages sent between Androids and iPhones appear as green bubbles on iPhones, even in group chats, while texts between iPhones appear as blue bubbles.

To illustrate how all of the compatibility issues affect the user experience of Android users we also provide our respondents with a video. This video format might also result in more engagement among college students who are used to consuming information in the form of videos. As a next step, all respondents complete a comprehension question about the content of the video, and only those who pass this comprehension question can proceed with the rest of the experiment.

H.2.2 Treatment groups

In our experiment we randomly assign respondents to one of two treatment groups: A green bubble group and a blue bubble group.

[5]To ensure that respondents understand that choices are incentive-compatible, we inform them that a computer will generate a random monetary offer. If the offer is less than the minimum amount they specified to switch to their less preferred phone, they will get the phone they prefer. If the computer's offer is at least as high as the amount, they will get the other phone and the extra money.

Green bubbles treatment Respondents in the green bubbles treatment are informed about Apple's announcement that the new iOS 18 operating system, coming in mid-September, will fix most of the compatibility issues between Androids and iPhones. In particular, respondents learn that Apple will use Rich Communication Service (RCS) to enable Android users to have read receipts and typing indicators, and be able to send high quality pictures and videos when sending texts to iPhones and vice versa. Respondents are further told that messages sent between Androids and iPhones will still appear as green bubbles. We again illustrate what this change means through a video which illustrates people's messaging experience under iOS 18.[6]

Blue bubbles treatment Respondents in the Blue bubbles treatment receive the same information about iOS 18 eliminating interoperability issues as respondents in the Green bubbles treatment. Respondents are further told that more recent technological advancements also make it possible that messages sent between Androids and iPhones appear as blue bubbles.[7] As in the green bubbles treatment, we show respondents a video which illustrates people's messaging experience under iOS 18 and with blue bubbles.[8]

H.2.3 WTP for receiving the preferred phone

Subsequently, all respondents move to the main outcome measure, a respondent's incentivized willingness to pay to receive their preferred phone. In particular, respondents first decide whether they prefer a Galaxy S24 Ultra or an iPhone 16 Pro Max, both of which cost around $1250[9]. We then remind respondents about some basic features of the BDM elicitation and inform them they will receive the phone in October, should they win the lottery. After respondents' choice of which phone they prefer, we ask them for the smallest amount of money that would make them choose the less preferred phone. We then ask respondents whether they agree with their stated choices.

[6]We use an iPhone with the iOS 18 Public Beta to record this video between an iPhone using RCS and an Android with RCS.

[7]We debrief participants of our experiment at the very end of the survey and explain that this is made possible by a new app called BlueBubbles. We do so in order to avoid respondents mistakenly believing that Green bubbles will be eliminated as a result of iOS 18.

[8]This video is recorded by an iPhone using the iOS 18 beta and messaging with an Android using the BlueBubbles app. The common information video can be viewed at: `https://youtu.be/ZUE1LOZQJHU`, the green bubbles treatment at: `https://youtu.be/hQHmg9zufDg`, and the blue bubbles treatment at: `https://youtu.be/VODjJ-rja1M`.

[9]This represents the average of the two phones. Specifically, at the time of the experiment, the Samsung Galaxy S24 Ultra was priced around $1300 while the iPhone 16 Pro Max was priced around $1200.

H.3 Discussion of the design

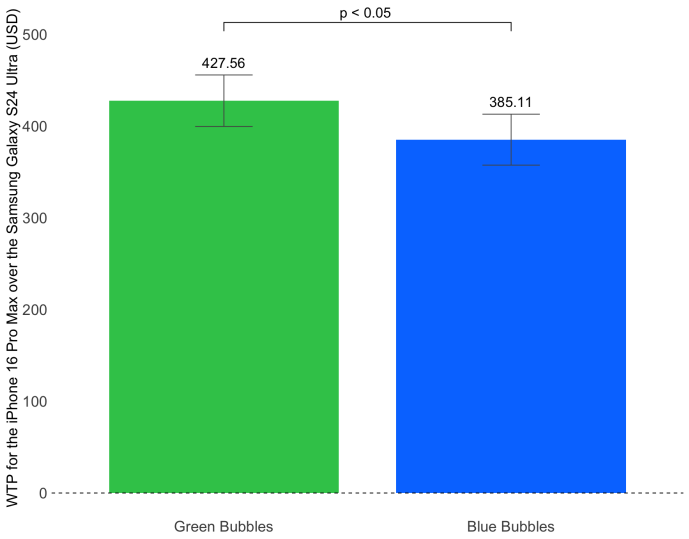
One concern revolves around misunderstandings about the BDM elicitation. To mitigate concerns we took a number of steps. We include a comprehension question about the BDM mechanism, an example good, and we ask respondents whether they regret their choices in the practice example and phone BDM elicitation. In particular, we ask them whether they agree with a statement about what their choices mean in terms of their preferences over the two phones and the minimum monetary payment required for them to receive the less preferred phone. For example, in the case of the practice good, a respondent with an excess valuation of an MacBook of $300 is asked whether they agree with the statement that "According to your answers to the previous questions, you would be willing to forgo $300 to get a MacBook Pro (16-inch, M2 Pro) instead of a Lenovo Think Pad X1 Extreme Gen 4." If respondents do not agree with this statement, they are asked to complete the elicitation one more time. Prior to the redirection, we inform participants that this will be their last chance to modify their answers. Our main sample is restricted to respondents who do not regret their final answers (i.e., we drop two-time regretters in the phone BDM elicitation).

Borderline deception A key challenge for our design lies in creating the expectation that blue bubbles will be eliminated. The instructions in our experiment rely on language suggesting to participants that blue bubbles will replace green bubbles for all users. In particular, we use language that makes use of the fact that there are new technological advances that would allow users to get blue bubbles, e.g. by installing the BlueBubbles app. While we do not lie to participants, our approach may come close to the boundary of deception. We decided to adopt this approach because it appeared to us as the only practically feasible way to elicit incentivized willingness to pay for the scenario that green bubbles are replaced by blue bubbles for everyone in the iOS 18 update.

H.4 Results

Figure A10 illustrates our main pre-registered results. Respondents in the Blue Bubble treatment have a $42 lower WTP for the iPhone 16 Pro Max compared to respondents in the Green Bubble treatment ($p < 0.05$). These effects are substantial in magnitude and correspond to 4% of the cost of the iPhone.

Figure A10: Average Incentivized Willingness to Pay for the iPhone 16 Pro Max over the Samsung Galaxy S24 Ultra



Notes: Figure A10 displays the average WTP for the iPhone 16 Pro Max over the Samsung Galaxy S24 Ultra by treatment status. Error bars are 95% confidence intervals.

H.5 Non-User Utility and Quality Misperceptions

Non-user utility can create "lock-in" effects that may contribute to misperceptions of the quality of the outside option, possibly from lack of information acquisition. To investigate this mechanism, we conducted a pre-registered survey collection on the perceptions of Android quality relative to iPhones as part of the iMessage deactivation study.

We find that over 68% of our sample respondents underestimate the display quality (as measured through display resolution) of the Galaxy S24 Ultra compared to the iPhone 16 Pro Max. Similarly, almost 52% of people underestimate the camera quality of the Galaxy S24 Ultra (as measured through camera megapixels) compared to the iPhone 16 Pro Max. We interpret this as suggestive evidence that our effects are capturing a lower bound of the treatment effect size as increasing non-user utility may result in quality perceptions being updated through either more information acquisition or through social network spillovers as Android market share increases.

I Coding of Open Ended Responses

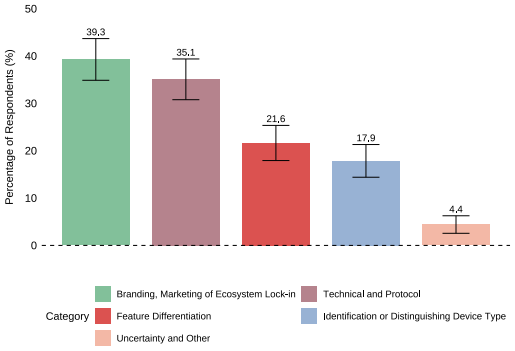
Similar to the approach in Bursztyn et al. (2025), our mechanism survey included open-ended questions to provide further evidence on the existence of and mechanisms behind the green bubble stigma. To do so, we follow best practices as outlined in Haaland et al. (2023) and Haaland et al. (2025). Our first open-ended question is at the beginning of the survey to avoid priming respondents and limit concerns surrounding experimenter demand effects. Our three additional questions were asked after informing participants about the green bubbles that appear on iPhones when messaging Androids and existing compatibility issues. We hand-coded the open-ended responses in a non-mutually exclusive way, based on defined categories. Our open-ended question are:

- "When you think of someone who owns an Android instead of an iPhone, what comes to mind?"
- "Why do you think messages sent from iPhones to Androids appear as green bubbles on iPhones?"
- A binary question "Imagine a scenario where after the release of the iOS 18 update, an additional messaging feature could eliminate green bubbles by making all messages, from both iPhones and Androids, appear as blue bubbles on all iPhones. Would you want all iPhone and Android users, including yourself, to have this additional messaging feature?" and independent of the answer "Please explain why in full sentences."
- A binary question "Do you think that there is a social stigma against Android users whose text messages appear as green bubbles on iPhones?" and independent of the answer "Please explain in full sentences why you think that."

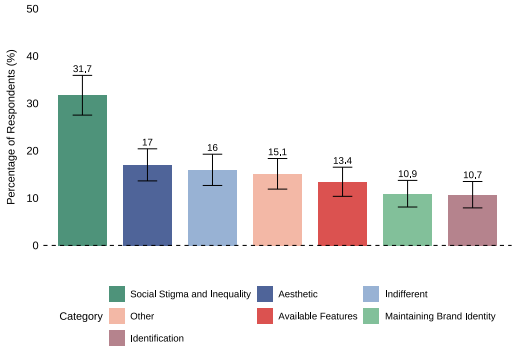
OpenAI API Coding We use ChatGPT 4o through the OpenAI API in order to classify open-ended responses into the various pre-defined categories. We provide ChatGPT with the following prompt: "You will be supplied with a list of responses. These responses reflect thoughts on Android users versus iPhone users. Please classify responses based on the coding scheme below. Each open-ended response can fall into multiple categories or none." Then, we provide the different categories and examples of responses that would fit into each category. The categories are not mutually exclusive.

Hand-Coding We hand-coded the open-ended responses based on our seven categories and definitions. We had two independent research assistants review each response and reconcile any differences in the handcoding. We find that there is a high correlation between the two handcoded responses for each category for both open-ended questions as seen in Table A19 which confirms our manual handcoding.

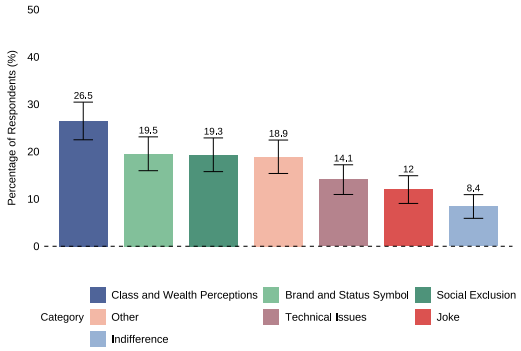
Figure A11: Handcoding Results of Open-Ended Questions



(a) Reasons for the existence of green bubbles on iPhones when messaging Androids



(b) Reasons for/against software update that makes bubbles blue on all devices



(c) Reasons for why respondents do/do not believe in the existence of a stigma against Android users

Figure A12: Perceptions of what comes to mind when considering the average Android user versus the average iPhone user by phone type

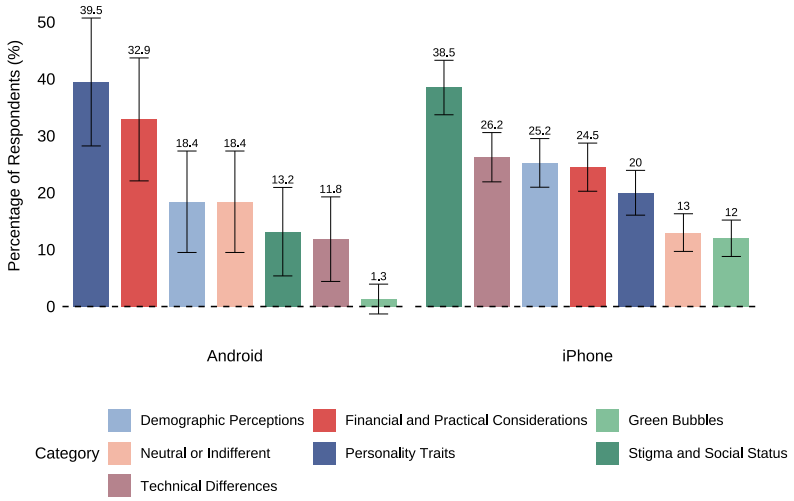


Figure A13: Reasons for supporting/opposing an additional software feature that eliminates green bubbles for all by phone type

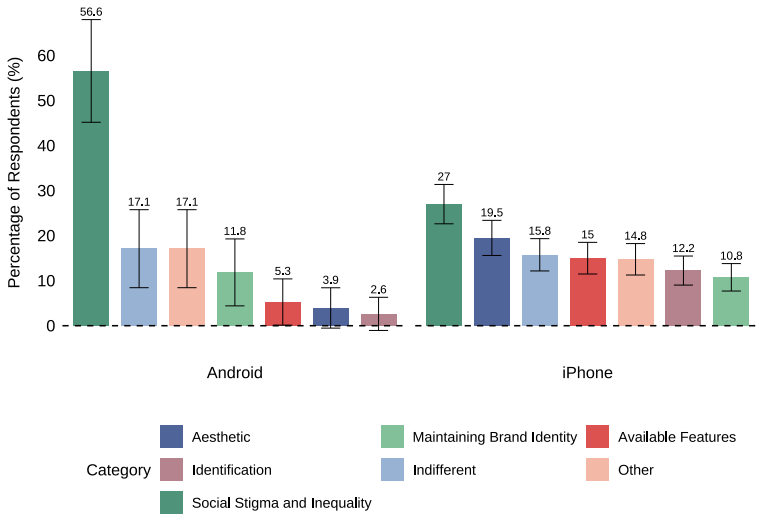


Table A15: Overview of hand-coding scheme for what comes to mind when thinking of an Android user compared to an iPhone user

Category	Definition	Examples
Stigma and Social Status	Responses that reflect perceptions of social judgment, peer pressure, or a perceived lower or higher social status or income associated with owning an Android. These responses may also describe Android users' perceived hatred for Apple, or annoyance at compatibility issues between Android phones and iPhones.	"I kind of gives me the ick when I see someone not using an iPhone since my whole life iPhone was always the top of the line and if you didn't use one you were below everyone else who did." *or* "I recently re-entered the dating scene, and I was messaging a girl on instagram before she asked for my number. Upon giving her my number and texting her a bit, she made a comment about my messages "being green" on her iPhone. This isn't the first time someone has mentioned my android phone in a sort of derogatory, disparaging tone. I own an Android because it's cheaper and it does what I need it to do. I can't count the number of times someone has asked me "Why don't you have an iPhone?"."
Demographic Perceptions	Responses that discuss at least one of age, profession, income, family, education, geographic region / nationality, or ethnicity, without implying personality judgments nor mentioning stigmatization.	"I feel like Android users are more old people." *or* "An average person wealthier maybe with some nicer clothes."
Neutral or Indifference	Responses that show indifference, neutrality, or no specific judgment regarding the use of Android over iPhone.	"I don't have much an opinion on it. I just see it as they have a phone." *or* "Nothing really comes to mind, everybody has their own phone brand preferences."
Financial and Practical Considerations	Responses that emphasize cost, affordability, or practical reasons for choosing an Android over an iPhone.	"When I think of someone who owns an Android instead of an iPhone, I often imagine they might value flexibility and customization in their device" *or* "Someone who's trying to save more money. Someone is trying to get more value out of what they buy. Someone who needs something more versataile and customizable for their ambition."
Technical Differences	Responses that focus on the technical features, functionality, or quality of Android devices compared to iPhones.	"Lower functionally when it comes to iMessages. Namely, they won't be able to see the same emojis that I do and they will not have the same group chat functionality. In addition, no FaceTime" *or* "Some features will not be able to be shared between people if one has an iPhone and the other has android. Newer Android phones seem to typically have a better camera than iPhones."
Green Bubbles	Responses that specifically mention the green bubble color that appears on iPhones when messaging Androids.	"Someone who texts with green text bubbles."
Personality Traits	Responses that attribute positive personality characteristics, behaviors, or values to Android users, and that do not mention stigmatization. "Personality Traits" are internal qualities that reflect someone's character. Note that responses that are explicitly about negative personality traits of Android users should be coded as "Social Status and Stigma" instead.	"I perceive them as caring less about social pressure, instead focusing on personal preference and specific functionality." *or* "I believe a person who owns an Android would be more tech savvy."

Notes: The table provides an overview of the hand-coding scheme used to categorize open-ended responses to the question, "When you think of someone who owns an Android instead of an iPhone, what comes to mind?" This question was asked without any priming and was posed to all participants, regardless of their operating system.

Table A16: Overview of hand-coding scheme for why the green bubbles appear on iPhones when messaging Androids

Category	**Definition**	**Example**
Technical/Protocol	Attribute the green/blue bubble distinction to differences in the underlying messaging systems, protocols, or technical incompatibilities between iOS and Android. These responses emphasize the mechanics, such as SMS/MMS vs. iMessage, encryption differences, or system-level incompatibilities.	"Apple uses iMessage to secure data, however this cannot be done with Android phones." *or* "Blue bubbles on iPhones use the iMessage app, while the green bubbles indicate that the messages are just text messages. iPhones also have the option to send green bubbles but I assume its only done when there is poor reception."
Feature Differentiation	Responses that highlight that green bubbles are used to signal differences in available messaging features, quality, or functionality when texting non-Apple users.	"I believe Android users don't have all the capabilities that iPhone users have over text which is why they highlight it green to show the difference in user." *or* "It lets you know if you're able to FaceTime the person/is a special feature"
Identification or Distinguishing Device Type	The response focuses on the green bubble as a simple identifier, without any suggestion of stigmatization or deliberate branding. The distinction is presented as a way for iPhone users to quickly recognize whether they are messaging another iPhone user or someone using a different device.	"To clarify to the iPhone user that an Android user is messaging them." *or* "Because blue is trademark for Apple. Green represents the android color green."
Branding, Marketing or Ecosystem Lock-in	Suggest Apple uses the green bubble distinction as part of a deliberate strategy to create exclusivity, social pressure, or brand loyalty. These responses often reference psychological tactics, group dynamics, or Apple's intention to market iPhones as superior.	"I think apple probably wanted to disincentivize people from getting androids by making the experience of texting those with them unideal." *or* "I think it is a marketing scheme to create a brand identity and group that those who text iPhones and show blue bubbles are one and the same and Andriod users are excluded from that."
Uncertainty/Other	Reasoning is unclear, speculative, or does not neatly fit into the other categories. These might express doubt, confusion, or provide vague explanations without much detail.	"I am not sure, maybe for uniqueness sake" *or* "They look green because the Android company wanted it that way."

Notes: The table provides an overview of the hand-coding scheme used to categorize open-ended responses to the question: 'Why do you think messages sent from iPhones to Androids appear as green bubbles on iPhones?' This question was asked after informing participants about the existing compatibility issues that mark iPhone-to-Android communication and was asked to all participants irrespective of their operating system.

Table A17: Overview of hand-coding scheme for why people want or don't want an additional software update that makes bubbles blue for everyone

Category	Definition	Example
Maintaining Brand Identity	Suggest that the color difference is a deliberate marketing tool by Apple to reinforce brand identity, exclusivity, and superiority. They see the color distinction as a business strategy rather than a technical necessity. Includes the belief that Apple has the right to maintain its brand identity.	"There was no reason not to have these features available to Android users to begin with, It is anti-consumer to have features withheld from the consumer when it is clearly easy and possible to implement them."
Social Stigma and Inequality	These responses either view the color distinction as fueling classism, bullying, or prejudice, and believe that by making all bubbles the same color, it would remove social pressure, end perceived snobbery, and create a more equal and accepting environment for all phone users. Or these responses reflect perceptions of social judgment, peer pressure, or a perceived lower social status associated with owning an Android.	"It would be better to eliminate the negative connotation associated with android users by eliminating bubbles." *or* "Because it would create equality and get rid of the stigma against android users."
Indifferent	These responses express that the entire debate is unimportant to them. The color of the message bubbles does not affect their day-to-day texting experience, so they remain neutral or uninterested in the issue.	"I don't think that the color difference is a big deal." *or* "Who really cares since its just texting and if it works why not include everyone".
Available Features	Knowing if the other person has an iPhone or Android helps anticipate which features are possible, such as FaceTime, emojis, iMessage games, voice messages, or high-quality file transfers.	"I like to see the different colors for the different phone users. This allows me to know whether I can communicate in certain ways, (i.e., FaceTime, emojis, etc...)." *or* "I feel like knowing that a person has an android based on this green bubble helps us know if we are able to use features like FaceTime or are able to send certain emojis."
Identification	Responses that argue that bubble colors serve a practical purpose by acting purely as a simple identifier for the type of device someone uses, without referencing underlying differences in features that can be used while messaging.	"I think that the green and blue messages should stay to let an iPhone user know if they are messaging with an Android or an iPhone." *or* "I wanna know the type of device i am receiving messages from."
Other	Do not fall into any of the other categories.	"I think that leaving it up to the user is a good idea. Just let the color of the chat be customized by the user to however they see fit." or "I believe it would just be far more simple this way than force different types of messing depending on phone. Type of phone should not matter while messaging anyone" *or* "I don't really know why, but it feels awkward to have the same colored bubble if you have a different phone type."
Aesthetic	These responses express a like or dislike for green bubbles based on aesthetic preferences.	"I like things to be uniform, so I would like all my messages to have the same appearance." *or* "You might as well have a cohesive design no matter the phone type."

Notes: The table outlines the hand-coding scheme used to categorize responses to a two-part question. The first part required a binary response regarding a hypothetical scenario—whether respondents would support an additional software feature that eliminates green bubbles by rendering all messages as blue bubbles on iPhones. Regardless of their binary choice, respondents were then asked to explain their reasoning.

Table A18: Overview of hand-coding scheme for why people believe that there is a social stigma associated with green bubbles/Androids

Category	**Definition**	**Example**
Social Exclusion	Descriptions of Android users facing extreme forms of exclusion such as being left out of group chats, communication inconveniences, or feeling excluded due to green bubbles in a way that is not simply a joke or a meme.	"I have personally been discriminated against because I use an android device. I have been excluded from a group project and now I have to figure something out before the due date." *or* "I have personally experienced group members in university upset that they would not have an iMessage group chat when conducting projects, aiming their dismay at me for being the sole one out."
Class and Wealth Perceptions	Associations of green bubbles with being "poor," "lower class," or less financially capable.	"The common perception of Android phones is that it is cheaper than an iPhone and people who may not have the funds to purchase an iPhone will buy certainly buy an Android instead." *or* "I have seen people who use non Apple products be deemed as lower class."
Brand and Status Symbol	Viewing iPhones as a premium brand or a marker of social status, with green bubbles perceived as a lack of prestige. Includes responses which perceive this as a deliberate strategy by Apple.	"Is a way to create a brand identity and separate one another." *or* "Yes, because some iPhone users believe that Android users are different and inferior simply because of the type of phone they have. The green text bubble signifies inferiority."
Technical Issues	Complaints about functionality differences such as picture quality, group messaging compatibility, or integration issues.	"There is an idea that androids are lower quality and do not possess the same capabilities as iPhones do." *or* "iPhone users get annoyed at android users because of the lack of integration between the 2 systems. Photo sharing is difficult especially"
Other	Do not fall into any of the other categories.	"People are judgemental of others choices" *or* "Most people have iPhones, so seeing something different always has an implied stigma."
Indifference	These responses express that the entire debate is unimportant to them. Can include acknowledgments that the stigma exists but is dismissed as insignificant.	"I do not think the color of a text message matters" *or* "What does it matter that someone uses SMS over iMessage? Who actually cares about that sort of thing?"
Joke	Acknowledgments that the stigma exists but is seen as a joke or meme, or that people are made fun of for using Androids.	"There are many jokes and memes about, for example, meeting someone you really like, getting their number, texting them and it's green, and saying ew nevermind. I think deep down no one really cares." *or* "On social media, it's a running joke for iPhone users to make fun of Android users."

Notes: The table summarizes the hand-coding scheme used to categorize responses to the two-part question: "Do you think that there is a social stigma against Android users whose text messages appear as green bubbles on iPhones?" In the first part, respondents provided a yes/no answer, and in the second part, they explained their reasoning. Again, this question was asked to all respondents.

Table A19: Validation of hand-coded data from Large Language Model

Panel A: Perceptions of what comes to mind when considering the average Android user versus the average iPhone user							
	Stigma	**Demographics**	**Neutral**	**Financial/ Practical**	**Technical**	**Green**	**Personality**
Correlation coefficient	0.7448	0.7589	0.7775	0.7123	0.6725	0.9779	0.6673
	(0.0307)	(0.0299)	(0.0289)	(0.0322)	(0.0340)	(0.0096)	(0.0342)
Hand-coded responses:							
Mean	0.3445	0.2416	0.1387	0.2584	0.2395	0.1029	0.2311
Std. dev.	0.4757	0.4285	0.3460	0.4382	0.4272	0.3042	0.4220
GPT-coded responses:							
Mean	0.3025	0.1597	0.1471	0.2899	0.2731	0.1071	0.2920
Std. dev.	0.4598	0.3667	0.3545	0.4542	0.4460	0.3096	0.4552
Observations	476	476	476	476	476	476	476

Panel B: Reasons for why messages sent from iPhones to Androids appear as green bubbles on iPhones					
	Technical	**Features**	**Identification**	**Branding**	**Other**
Correlation coefficient	0.7633	0.6877	0.7364	0.9207	0.4652
	(0.0297)	(0.0333)	(0.0311)	(0.0179)	(0.0407)
Hand-coded responses:					
Mean	0.3508	0.2164	0.1786	0.3929	0.0441
Std. dev.	0.4777	0.4122	0.3834	0.4889	0.2056
GPT-coded responses:					
Mean	0.4013	0.1975	0.2416	0.3761	0.0798
Std. dev.	0.4907	0.3985	0.4285	0.4849	0.2713
Observations	476	476	476	476	476

Panel C: Reasons for supporting/opposing an additional software feature that eliminates green bubbles for all							
	Brand	**Stigma**	**Indifferent**	**Identification**	**Features**	**Other**	**Aesthetic**
Correlation coefficient	0.7326	0.8827	0.6287	0.7192	0.7219	0.3995	0.7667
	(0.0313)	(0.0216)	(0.0357)	(0.0319)	(0.0318)	(0.0421)	(0.0295)
Hand-coded responses:							
Mean	0.1092	0.3172	0.1597	0.1071	0.1345	0.1513	0.1702
Std. dev.	0.3123	0.4659	0.3667	0.3096	0.3415	0.3587	0.3762
GPT-coded responses:							
Mean	0.0861	0.3046	0.1471	0.1408	0.1828	0.1282	0.2164
Std. dev.	0.2809	0.4607	0.3545	0.3481	0.3869	0.3346	0.4122
Observations	476	476	476	476	476	476	476

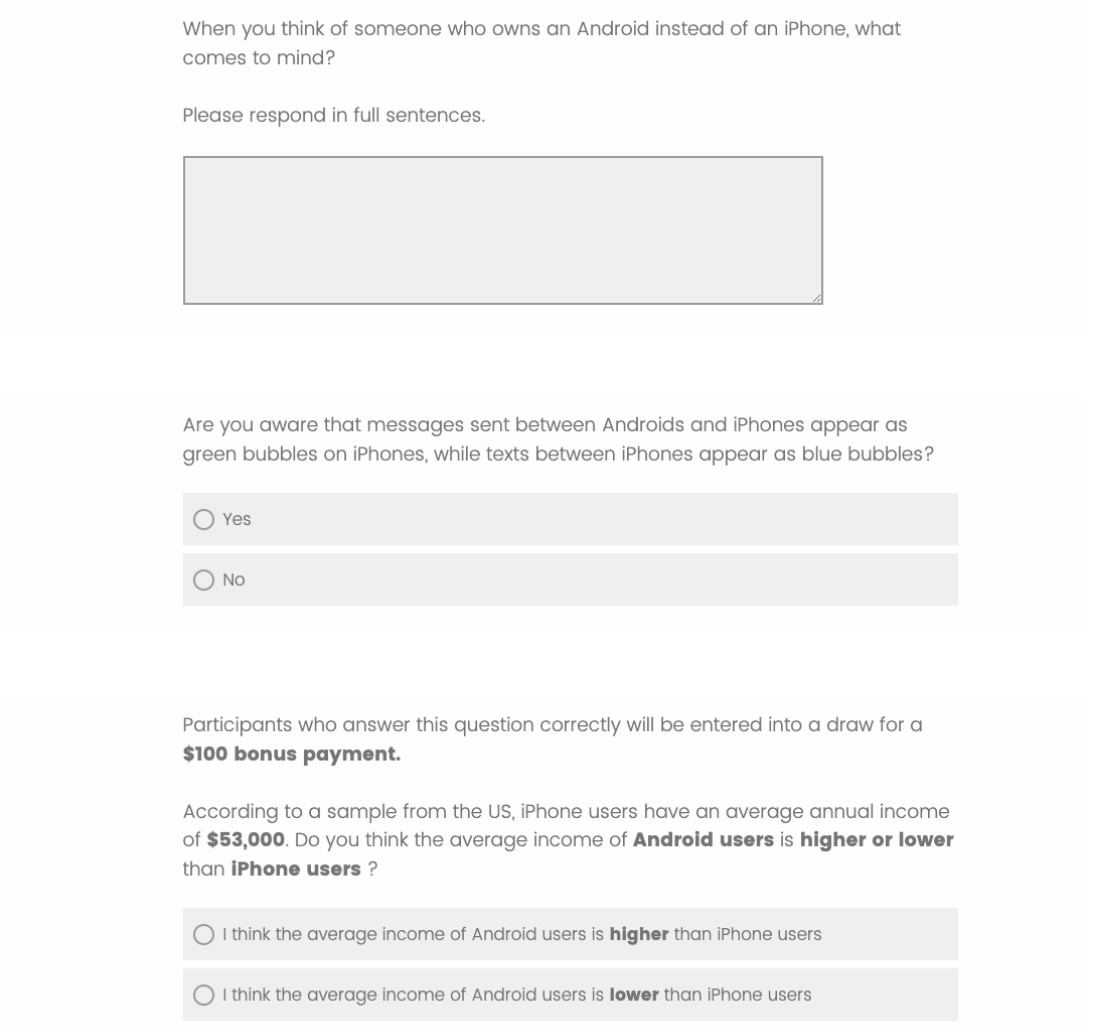
Panel D: Justifications for Social Stigma associated with Android users							
	Exclusion	**Class**	**Status**	**Technical Issues**	**Indifference**	**Other**	**Joke**
Correlation coefficient	0.6186	0.9305	0.6811	0.8675	0.7787	0.5623	0.7174
	(0.0361)	(0.0168)	(0.0336)	(0.0228)	(0.0288)	(0.0380)	(0.0320)
Hand-coded responses:							
Mean	0.1933	0.2647	0.1954	0.1408	0.0840	0.1891	0.1197
Std. dev.	0.3953	0.4416	0.3969	0.3481	0.2777	0.3920	0.3250
GPT-coded responses:							
Mean	0.2416	0.2710	0.2689	0.1345	0.1008	0.1303	0.1492
Std. dev.	0.4285	0.4449	0.4439	0.3415	0.3014	0.3369	0.3566
Observations	476	476	476	476	476	476	476

Notes: This table shows correlation coefficients between our manual and GPT-4o categorization of open-ended responses, with each column representing a classification category. Correlations are based on dummy variables set to 1 whenever a response was assigned to a given category under each coding method. The panels display, in chronological order, the results from our open-ended questions as described above. Standard errors are shown in parentheses. Correlation coefficients are computed using the Pearson correlation formula.

J Experimental Instructions

We present the main experimental instructions and decision screens for each of our four data collections.

J.1 Mechanism Survey



Participants who choose the most accurate bracket will be entered into a draw for a **$100 bonus payment.**

Please specify how much **lower** than $53,000 in US dollars you believe the average income of **Android users** is compared to **iPhone users.**

- ◯ $0-$4,999 lower
- ◯ $5,000-$9,999 lower
- ◯ $10,000-$14,999 lower
- ◯ $15,000-$19,999 lower
- ◯ $20,000-$24,999 lower
- ◯ More than $25,000 lower

Before we continue the series of questions, we will provide you with some information. Please be sure to carefully read through the information, as we might ask you questions about it later.

Texting between Androids and iPhones

Currently, texting between Androids and iPhones involves certain limitations due to **compatibility issues.**

Android users do not have access to **read receipts** or **typing indicators**, and can only send **low-quality pictures and videos** to iPhones and vice versa.

Moreover, the messages sent between Androids and iPhones appear as **green bubbles** on iPhones, while texts between iPhones appear as blue bubbles. Further, any group chats containing an Android user display green text bubbles.

Why do you think messages sent from Androids appear as green bubbles on iPhones?

Please respond in full sentences.

Department of Justice (DOJ) lawsuit against Apple

The Department of Justice (DOJ) has recently filed a lawsuit against Apple. This lawsuit focuses on the **anti-competitive practices** associated with Apple's iMessage service, including the impact of the green bubbles between iPhones and Androids.

This lawsuit could result in Apple being forced to **eliminate green bubbles** and implement blue bubbles regardless of the device.

We're conducting this survey to gather information about the representative opinion of everyday users. We plan to publish a report on these findings and circulate it widely on social media and in conferences.

Previous research conducted by members of our team on policy debates, such as banning social media, has been featured in several prominent news outlets, including the Washington Post and the Financial Times.

You have the **opportunity to share your perspective on this case**. Your insights are crucial in understanding how people feel about these issues and might shape the public debate surrounding this lawsuit.

We have no agenda in this case and are simply interested in your true preferences. Your responses will remain completely **anonymous** and will be reported only in **aggregate form**.

During this survey we will be collecting your opinion for different scenarios that will be used in our report.

We will report average statistics for the different questions we ask.

The **higher** your rating of certain product features, the **higher** the average covered in the report.

Will your individual responses to the questions in this survey contribute to the average in our widely circulated report on the DOJ lawsuit against Apple?

- ◯ Yes
- ◯ No

iOS 18 Update

Apple has announced that the new **iOS 18** operating system, set to be released in mid-September, will **fix most of the compatibility issues** between Androids and iPhones. Apple will use Rich Communication Service (RCS) to enable Android users to have read receipts, typing indicators and send high quality photos and videos when sending texts to iPhones and vice versa.

However, Apple has announced that messages sent between Androids and iPhones will **remain as green bubbles** on iPhones.

After the release of the iOS 18 update, most compatibility issues between iPhone and Android users will be resolved. This includes enabling Android users to see read receipts, typing indicators, and send high-quality photos and videos when texting iPhone users, and vice versa.

The only visual difference when messaging between iPhones and Androids will be the bubble color (blue versus green). Please keep this in mind as you answer the remaining questions.

Imagine a scenario where after the release of the iOS 18 update, an additional messaging feature could eliminate green bubbles by making all messages, from both iPhones and Androids, appear as blue bubbles on all iPhones.

Would you want all iPhone and Android users, including yourself, to have this additional messaging feature?

Reminder: Your preferences will be included in our report and might therefore influence the public debate. Please respond truthfully.

- ◯ Yes
- ◯ No

Please explain why in full sentences.

Recall, the DOJ has sued Apple over anti-competitive practices related to iMessage's green bubbles.

We're surveying users to gather opinions that might influence the public debate through a widely circulated report.

How **likely** do you believe it is that the DOJ lawsuit against Apple will **succeed** in forcing the company to eliminate the green bubbles?

very unlikely — very likely

0 10 20 30 40 50 60 70 80 90 100

Please select a value.

Do you think that there is a social stigma against Android users whose text messages appear as green bubbles on iPhones?

- ◯ Yes
- ◯ No

Please explain in full sentences why you think that.

How does **fixing the compatibility issues** of read receipts and typing indicators between Androids and iPhones **change the quality of Apple products?**

Strongly decreases quality	Decreases quality	No change in quality	Increases quality	Strongly increases quality
○	○	○	○	○

How does **fixing the compatibility issues** of read receipts and typing indicators between Androids and iPhones **change the quality of Android products?**

Strongly decreases quality	Decreases quality	No change in quality	Increases quality	Strongly increases quality
○	○	○	○	○

How does enabling messages sent from Androids to iPhones to appear as **blue bubbles change the quality of Android products?**

Strongly decreases quality	Decreases quality	No change in quality	Increases quality	Strongly increases quality
○	○	○	○	○

How does enabling messages sent from Androids to iPhones to appear as **blue bubbles change the quality of Apple products?**

Strongly decreases quality	Decreases quality	No change in quality	Increases quality	Strongly increases quality
○	○	○	○	○

Do you think that the average iPhone user is more or less attractive than the average Android user?

- ○ The average iPhone user is more attractive than the average Android user
- ○ The average iPhone user is less attractive than the average Android user

How likely do you believe it is that the results of this study will be published in a major news outlet (such as the New York Times or the Washington Post)?

very unlikely 0 10 20 30 40 50 60 70 80 90 very likely 100

Please select a value.

Recall that your answers are counting towards the average which will be featured in our report, **which we plan to widely circulate** on social media and in conferences.

How did this influence the effort you put into your responses?

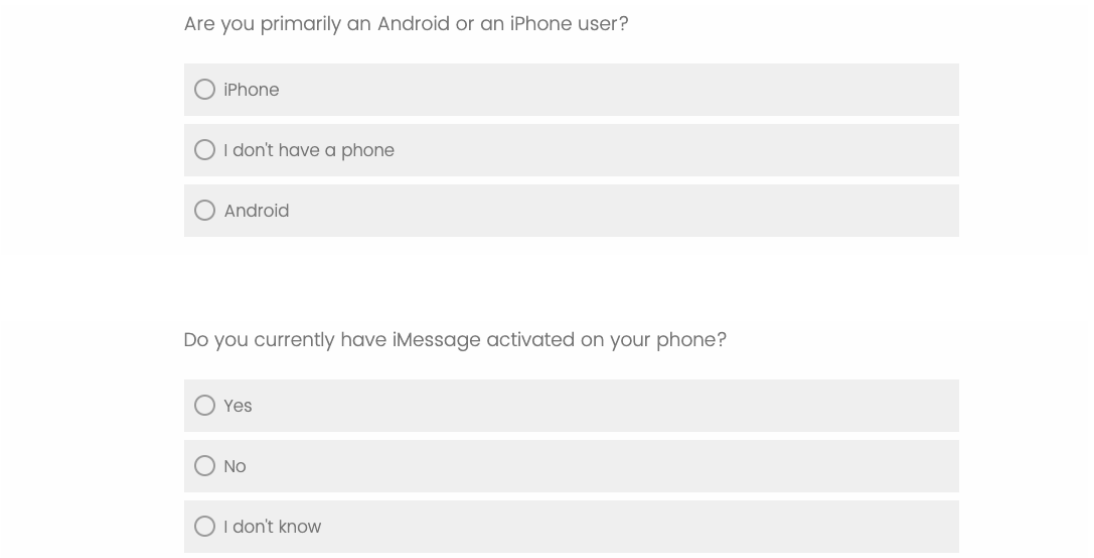
- ◯ It made me put less effort into answering the questions.
- ◯ It made me put more effort into answering the questions.
- ◯ It did not affect the amount of effort I put into answering the questions.

Recall that your answers are counting towards the average which will be featured in our report, **which we plan to widely circulate** on social media and in conferences.

How did this influence how you expressed your opinions?

- ◯ It didn't affect how extremely I reported my opinions
- ◯ It made me report my opinions as more extreme
- ◯ It made me report my opinions as less extreme

J.2 iMessage Deactivation Survey



We are interested in conducting an experiment where we ask participants to deactivate or keep active certain mobile phone features **for four weeks from November 4th to December 1st, 2024.**

We will compensate individuals for their participation with a monetary payment.

Should participants want to leave the study during the four weeks they can, but they will then forgo any monetary payment. To verify that participants deactivate or keep active certain features of their phone, **we will require them to upload one screenshot of their settings and may periodically send out one text per week**. **For that purpose, we would have to collect your phone number**. If you consent to participating and are selected to deactivate or keep active certain mobile phone features, College Pulse will provide us with your phone number.

If a participant fails these checks, they will not receive any monetary payment. Texts will be sent at a random time during the day once a week. It will not be at night when the participant may be asleep.

Are you willing to participate in this study?

- ◯ Yes
- ◯ No

This question will be used for a $100 Amazon gift card lottery for correct respondents.

How will we verify that selected users deactivate or keep active certain features? **Please select all that apply.**

- ☐ By periodically sending out a text message once a week.
- ☐ By asking them to upload one screenshot of their settings.
- ☐ By calling people to ask them.

This question will be used for a $100 Amazon gift card lottery for correct respondents.

For how long will we ask selected users to deactivate or keep active certain features?

- ◯ One week
- ◯ Eight weeks
- ◯ Four weeks
- ◯ Ten weeks

Before we proceed, we will give you a hypothetical example to explain how we will determine your compensation.

Suppose that we ask you to deactivate your FaceTime for four weeks.

Here's how it works:

1. We will ask you multiple questions to determine the smallest amount of money you would need to deactivate FaceTime for four weeks. We refer to this amount as your valuation below.
2. The computer will randomly generate an amount of money to offer you to deactivate FaceTime for four weeks.
3. If your valuation is lower than the computer's offer, we will ask you to deactivate FaceTime for four weeks and give you the computer's offer.
4. If your valuation is higher than the computer's offer, we will not ask you to deactivate FaceTime and you will not receive any payment in that case.

This rule means that the higher the amount you require to deactive FaceTime on your iPhone, the lower the chance that you will be chosen to be in the study and receive the computer's offer.

To make sure you get the best option for you, it is important to be **truthful** about the amount of **money** you would need to deactivate FaceTime.

We will now ask you a comprehension question based on the text above. This question will be used for a $100 Amazon gift card lottery for correct respondents.

Which of the following statements is **true** about the minimum amount of money you would require to deactivate FaceTime on your iPhone?

- ○ Requiring a higher amount of money to deactivate FaceTime makes it less likely that I will be chosen to deactivate FaceTime and receive the extra payment.
- ○ The minimum amount of money required to deactivate FaceTime does not affect the chance that I will be chosen to deactivate FaceTime.
- ○ Requiring a higher amount of money to deactivate FaceTime makes it more likely that I will be chosen to deactivate FaceTime and receive the extra payment.

Which of the following options would you prefer?

- ○ I prefer to participate in the study that involves deactivating FaceTime for the next four weeks AND receive $0
- ○ I prefer not to participate in the study that involves deactivating FaceTime for the next four weeks AND receive $0

Texting between Androids and iPhones

Texting between Androids and iPhones has historically involved certain limitations due to **compatibility issues.**

Android users did not have access to **read receipts** or **typing indicators**, and could only send **low-quality pictures and videos** to iPhones and vice versa.

Some limitations still persist today. In particular, the messages sent between Androids and iPhones appear as **green bubbles** on iPhones, while texts between iPhones appear as blue bubbles. Further, any group chats containing an Android user display green text bubbles.

This question will be used for a $100 Amazon gift card lottery for correct respondents.

Which of the following has **NOT** been a longstanding compatibility issue for texting between Androids and iPhones?

- ◯ No read receipts or typing indicators
- ◯ Low-quality pictures and videos
- ◯ Androids cannot send pictures to iPhones
- ◯ Texting between Androids and iPhones is marked by messages appearing in green bubbles on iPhones

Texting between Androids and iPhones

Apple's new **iOS 18** operating system, released on September 16th, **fixes most of the compatibility issues** between Androids and iPhones. Apple uses Rich Communication Service (RCS) to enable Android users to have read receipts, typing indicators and send high quality photos and videos when sending texts to iPhones and vice versa.

However, messages sent between Androids and iPhones will **remain as green bubbles** on iPhones.

As part of our study, we will ask you to **deactivate or keep active certain features of your phone** for four weeks in exchange for a **monetary payment**.

We will now ask you to **consider two options for the study**, one of which will be implemented for 1 out of every 10 respondents.

Option 1

The first option for the study requires **no changes to your phone** for the next four weeks.

To participate, you would simply need to upload one screenshot of your settings and receive one text message per week.

Please note that your phone would remain unchanged throughout the study.

Below is a picture of the current message display in iMessage.

Which of the following options would you prefer?

- ◯ I prefer to participate in the study for the next four weeks AND receive $0
- ◯ I prefer not to participate in the study for the next four weeks AND receive $0

Option 1

The first option for the study involves **deactivating your blue bubbles on iMessage** for the next four weeks. During this time, your messages would **appear as green bubbles,** the **same color as standard text messages,** both to you and to others.

In this option, your messages may appear to others **as if they were sent from an Android phone.** This change would affect group conversations as well, turning the entire chat green when you send messages.

To participate, you would also need to upload one screenshot of your settings and receive one text message per week.

Please note that nothing about your phone would change except for deactivating blue bubbles.

Below is a picture that displays how messages would look like once blue bubbles are deactivated.

Which of the following options would you prefer?

- ○ I prefer to participate in the study that involves deactivating the blue bubbles on iMessage for the next four weeks AND receive $0
- ○ I prefer not to participate in the study that involves deactivating the blue bubbles on iMessage for the next four weeks AND receive $0

Please assess the statement below.

Unlikely 0 10 20 30 40 50 60 70 80 90 Very likely 100

For those respondents who are chosen to get their choices implemented, how likely do you think it is that the study just described in Option 1 will be the one selected for implementation?

Option 2

The second option for the study involves adjusting your phone settings to **deactivate your phone camera** for the next four weeks.

To participate, you would also need to upload one screenshot of your settings and one screenshot of your Screen Time settings per week.

Please note that nothing about your phone would change other than your camera being turned off.

Below is a picture that shows how your settings would look like if the phone camera is deactivated.

Which of the following options would you prefer?

- I prefer to participate in the study that involves deactivating the phone camera for the next four weeks AND receive $0
- I prefer not to participate in the study that involves deactivating the phone camera for the next four weeks AND receive $0

Option 2

The second option for the study involves adjusting your phone settings to **deactivate iMessage** for the next four weeks. You would still be able to use text messaging and other messaging platforms, such as WhatsApp, Instagram, Snapchat, etc.

To participate, you would also need to upload one screenshot of your settings and receive one text message per week.

Please note that nothing about your phone would change except for deactivating iMessage.

Below is a picture that shows how RCS messages would look like once iMessage is deactivated.

Which of the following options would you prefer?

- ○ I prefer to participate in the study that involves deactivating iMessage for the next four weeks AND receive $0
- ○ I prefer not to participate in the study that involves deactivating iMessage for the next four weeks AND receive $0

Please assess the statement below.

Unlikely 0 10 20 30 40 50 60 70 80 90 Very likely 100

For those respondents who are chosen to get their choices implemented, how likely do you think it is that the study just described in Option 2 will be the one selected for implementation?

We will now ask you about the differences between the Samsung Galaxy S24 Ultra and the iPhone 16 Pro Max. Both phones are expected to be in a similar price range of $1,250.

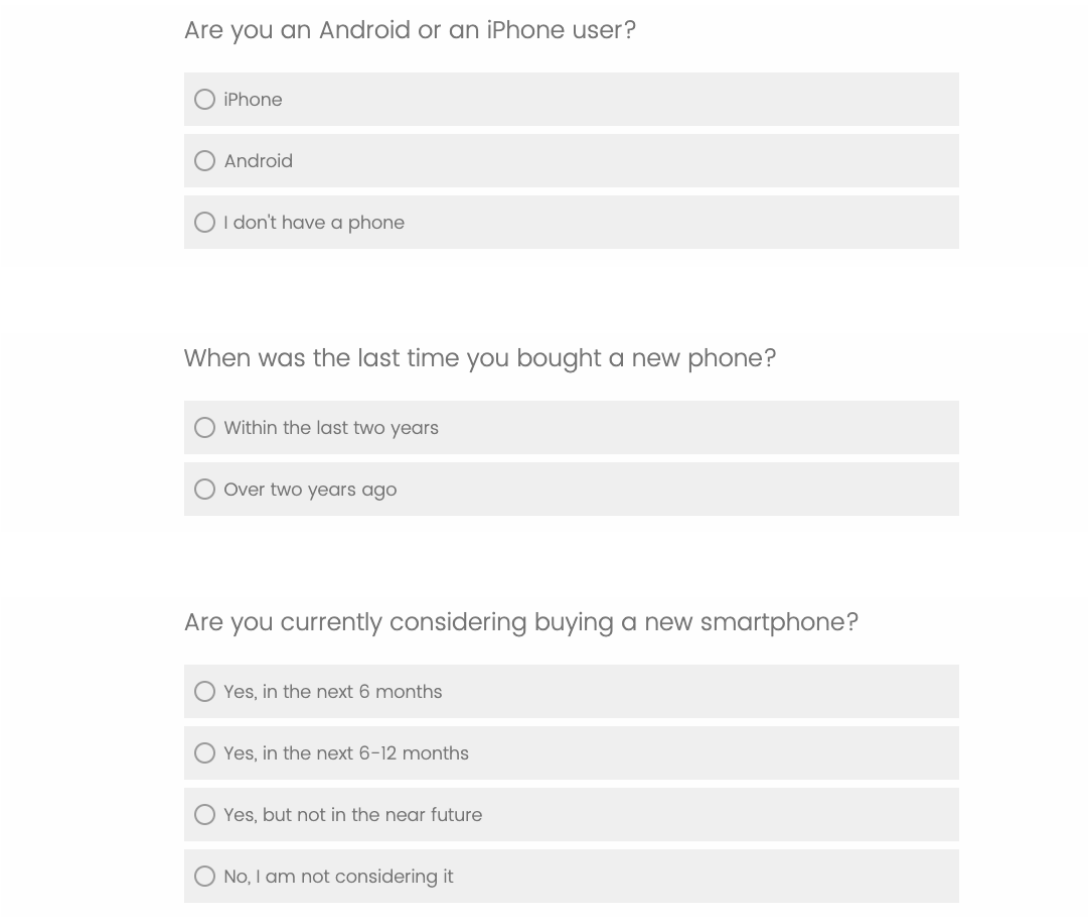
Please compare the Galaxy S24 Ultra and the iPhone 16 Pro Max in all aspects listed below to the best of your knowledge.

	Galaxy S24 Ultra is much better	Galaxy S24 Ultra is better	They are the same	iPhone 16 Pro Max is better	iPhone 16 Pro Max is much better
Display Resolution	○	○	○	○	○
Main Camera Megapixels	○	○	○	○	○

The deactivation option that might be implemented is the **iMessage deactivation**. We will **contact you via your phone number** from College Pulse next week **if you are chosen** to participate in the deactivation for four weeks and inform you of your monetary payment for participating in the deactivation.

There currently does not exist a feature on the iPhone to change only the color of your text messages from blue to green to all users. Thank you for participating in our study. Your responses are greatly appreciated and contribute valuable insights to our research. If you have any questions or would like more information about the study, please feel free to contact us.

J.3 Demand Experiment



After this survey, we will hold **a lottery** to win a smartphone!

You can choose to win an **iPhone 16 or a Google Pixel 9 and $150**. Currently, the iPhone 16 costs $800 and the Google Pixel 9 costs $650.

Both recently released, the iPhone 16 and the Google Pixel 9 are **similar in terms of overall phone quality,** including camera, battery, and display quality.

Approximately 1 out of 500 participants will win the lottery.

Here's how it works:

1. For a possible scenario, we will ask you to choose which phone you like better: the iPhone 16 or the Google Pixel 9 and $150.
2. If the future scenario occurs, the lottery will be held.
3. To make sure you get the best option for you, it is important to be **truthful** about what **choice** you like better under the scenario we describe.
4. If you win the lottery, we will ask for your zipcode and send the phone and possible cash reward to a pickup location near you (such as an Amazon Locker or PO Box). This allows you to collect the prize privately and securely at your convenience.

Which of the following statements is correct regarding how you should answer the lottery questions? This question will be used for the **$100** bonus payment.

- ○ The choice you make influences the probability of winning the lottery.
- ○ Since the scenario involves a future possibility, it does not matter which option you choose.
- ○ Since the future scenario could occur, it is important to answer truthfully about which option you prefer.

Texting between Android and Apple Devices

Currently, SMS/MMS texting between Androids and iPhones involves certain limitations due to **compatibility issues.**

In particular, the messages sent between Androids and iPhones appear as **green bubbles** on iPhones, while texts between iPhones appear as blue bubbles. Further, any group chats containing an Android user display green text bubbles.

Before we continue the series of questions, we will provide you with some information. Please be sure to carefully read through the information, as we might ask you questions about it later.

Department of Justice (DOJ) lawsuit against Apple

The Department of Justice (DOJ) has recently filed a lawsuit against Apple, alleging **anti-competitive practices** related to its iMessage service. The lawsuit specifically highlights the impact of the green bubbles that appear in messages between Androids and iPhones as opposed to the blue bubbles that appear in messages between iPhones.

If successful, the lawsuit could force Apple to **remove the green bubbles** and standardize blue bubbles across all devices, regardless of the platform.

Experts anticipate that the trial is expected to begin **in the coming months**, with a decision in the case likely to follow shortly after.

According to this survey, what could Apple be forced to do because of the DOJ lawsuit? This question will be used for the **$100** bonus payment.

- ◯ Introduce a separate app exclusively for Android users to message iPhones
- ◯ Force Apple to discontinue the iMessage service entirely
- ◯ Remove green bubbles for messages between Android and Apple devices
- ◯ There is no risk of Apple being forced to make any changes

Now, we will ask you about your preference between receiving an iPhone 16 or a Google Pixel 9 and $150 if you win the lottery.

We will ask you for your preferred choice under a possible future scenario. If this scenario occurs, you will be entered into the lottery.

Recall that to make sure you get the best option for you, it is important to be **truthful** about what choice you like better in the scenario we describe.

Scenario: DOJ doesn't ban green bubbles

Assume that Apple loses the lawsuit in the coming months, resulting in significant fines, but **green bubbles remain**.

This means messages exchanged between Android and iPhone users would still **appear as green bubbles** on iPhones, and this would also apply to group chats, where any group containing an Android user would display green text bubbles on iPhones.

In this scenario, which of the following options would you prefer to receive?

- ○ iPhone 16
- ○ Google Pixel 9 and $150

How **likely** do you believe it is that the DOJ lawsuit against Apple will **succeed** in making them pay significant fines but that green bubbles will remain in the coming months?

very unlikely — very likely

0 10 20 30 40 50 60 70 80 90 100

Please select a value.

What percent of your friends are iPhone (iOS) or Android users?

iPhone	0
Android	0
Other	0
Total	0

Assume that Apple loses the lawsuit in the coming months, resulting in significant fines for Apple but green bubbles remain.

What percent of your friends do you think would be iPhone (iOS) or Android users **one year from now**?

iPhone	0
Android	0
Other	0
Total	0

Do you usually resell your old phone?

- ◯ Yes
- ◯ No

Would you plan to resell this phone, in case you win the lottery?

- ◯ Yes
- ◯ No
- ◯ It depends on which phone I get

Currently, the maximum resale value* of the iPhone 16 in good condition is around $250 higher than the maximum resale value of the Google Pixel 9 in good condition.

Assume that Apple loses the lawsuit in the coming months, resulting in significant fines for Apple but green bubbles remain.

How do you think the maximum resale value of the iPhone 16 would compare to the maximum resale value of the Google Pixel 9 one year from now?

- ○ I expect the maximum resale value of the iPhone to be higher than the maximum resale value of the Google Pixel 9.
- ○ I expect the maximum resale value of the Google Pixel 9 to be higher than the maximum resale value of the iPhone.

*The claim above ($250 price difference) is based on data from Flipsy.com, a company that describes itself as follows. "Flipsy.com is the leading online pricing guide that provides accurate values for phones, tablets, gaming consoles, smart watches, books and other items. Flipsy is used by sellers to determine how much their items are worth and by buyers who are seeking fair prices."

Please specify how much higher in US dollars you believe the maximum resale value of the iPhone 16 will be compared to the Google Pixel 9 one year from now under this scenario.

$ [ ]

J.4 Additional Demand Experiment

Are you primarily an Android or an iPhone user?

- ○ Android
- ○ I don't have a phone
- ○ iPhone

Have you pre-ordered the new iPhone 16 Pro Max?

◯ Yes

◯ No

After this survey, we will hold **a lottery** to win a smartphone plus a monetary payment!

You can choose to win an **iPhone 16 Pro Max or a Galaxy S24 Ultra**. Both smartphones are in the same price range.

1 out of 200 participants will be the winner of the lottery.

Here's how it works:

1. Choose which phone you like better: the iPhone 16 Pro Max or the Galaxy S24 Ultra.
2. Next, we will ask you to choose between:

- Receiving the phone you prefer.
- Receiving the phone you do not prefer, plus extra money.

We want to know the smallest amount of extra money you would need to switch from your preferred phone to the other one.

Here's how we will decide if you win the lottery:

1. A computer will randomly pick an amount of money to offer you to switch.
2. Before we tell you the computer's offer, we will ask you the smallest amount of money you would be willing to accept.
3. If the offer is less than your amount, you will get the phone you prefer.
4. If the computer's offer is at least as high as your amount, you will get the other phone and additionally the computer's monetary offer.
5. Therefore, reporting a higher amount of money required to switch from the preferred phone to the other one decreases the likelihood of receiving the non-preferred phone and extra payment.

To make sure you get the best option for you, it is important to be **truthful** about what **phone** you like better and the **extra amount of money** you would need to switch.

We will now ask you a comprehension question based on the text above. This question will be used for the **$100 bonus payment lottery**.

Which of the following statements is **true** about the minimum amount of money you would require to switch from your preferred phone to the other one?

- ○ Reporting a higher amount of money I require to switch makes it less likely that I will get the phone I do not prefer and the extra payment.
- ○ The minimum amount of money I require to switch does not affect the chance that I will get the phone I do not prefer and the extra payment.
- ○ Reporting a higher amount of money I require to switch makes it more likely that I will get the phone I do not prefer and the extra payment.

Before we begin, we will go through the mechanism with a hypothetical practice question.

The following two devices are both priced around $2300. Which of the following would you prefer to receive?

- ○ MacBook Pro (16-inch, M2 Pro)
- ○ Lenovo ThinkPad X1 Extreme Gen 4

How much do you value getting your preferred device?

You said you prefer getting a MacBook Pro (16-inch, M2 Pro) instead of a Lenovo ThinkPad X1 Extreme Gen 4.

A computer will randomly choose an amount of money to offer you along with the Lenovo ThinkPad X1 Extreme Gen 4 to make that option more appealing. For example, you might

- still prefer a MacBook Pro (16-inch, M2 Pro) over a Lenovo Think Pad X1 Extreme Gen 4 *and $20*
- but you might prefer a Lenovo Think Pad X1 Extreme Gen 4 *and $200* over a MacBook Pro (16-inch, M2 Pro).

If the computer offers you at least the amount of money you want to switch, you will get the Lenovo ThinkPad X1 Extreme Gen 4 and the money if you win the lottery. If the computer offers you less than the amount you want, you will get the MacBook Pro (16-inch, M2 Pro) and no extra money.

What is the **smallest amount of money (in US dollars)** that would make you choose the Lenovo ThinkPad X1 Extreme Gen 4 and the money over the MacBook Pro (16-inch, M2 Pro)?

$

Did you find the way in which you were asked to state your valuation of receiving your preferred phone confusing?

- ◯ Very Confusing
- ◯ Confusing
- ◯ Slightly Confusing
- ◯ Not at all confusing

Before we ask you to choose which smartphone you like better, we will give you some information.

Please be sure to **carefully read through the information**, as we might **ask you questions** about it later for the **$100 bonus payment lottery.**

We will then ask you to choose whether you would prefer getting an iPhone 16 Pro Max or a Galaxy S24 Ultra, if you win the lottery.

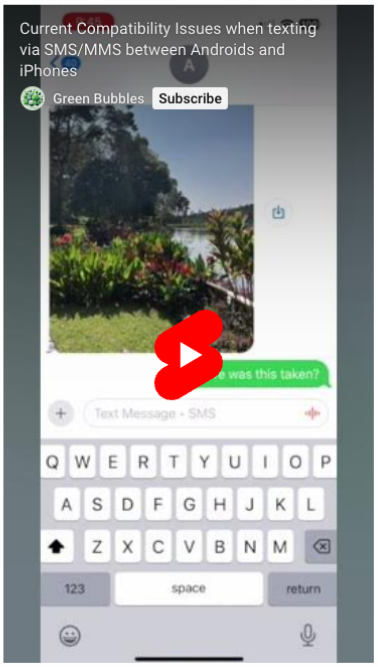
Texting between Androids and iPhones

Currently, texting between Androids and iPhones involves certain limitations due to **compatibility issues.**

Android users do not have access to **read receipts** or **typing indicators**, and can only send **low-quality pictures and videos** to iPhones and vice versa.

Moreover, the messages sent between Androids and iPhones appear as **green bubbles** on iPhones, while texts between iPhones appear as blue bubbles. Further, any group chats containing an Android user display green text bubbles.

Please watch the video below, which highlights the compatibility issues that occur when messaging between Androids and iPhones. We may ask you questions about it later for the **$100 Amazon gift card lottery**.



This question will be used for the **$100 bonus payment lottery**.

Which of the following is **NOT** a current compatibility issue for texting between Androids and iPhones?

- ◯ Androids cannot send pictures to iPhones
- ◯ Texting between Androids and iPhones is marked by messages appearing in green bubbles on iPhones
- ◯ No read receipts or typing indicators
- ◯ Low-quality pictures and videos

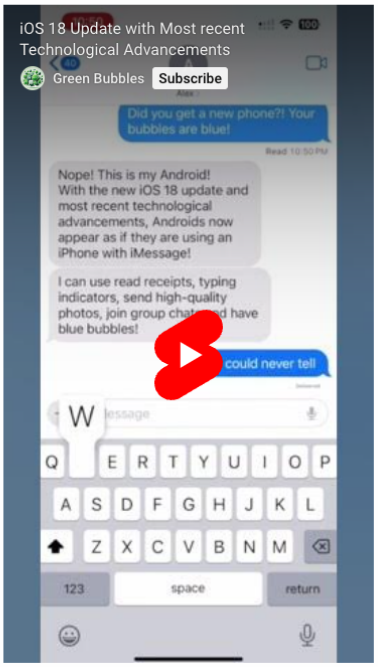
Texting between Androids and iPhones

Apple has announced that the new **iOS 18** operating system, set to be released on September 16th, will **fix most of the compatibility issues** between Androids and iPhones. Apple will use Rich Communication Service (RCS) to enable Android users to have read receipts, typing indicators and send high quality photos and videos when sending texts to iPhones and vice versa. Moreover, the most recent technological advancements further **eliminate** compatibility issues.

With these advancements, messages sent between Androids and iPhones **appear as blue bubbles**.

In this case, Android users will now appear **as if they use an iPhone** and have a more similar, seamless, and unified messaging experience when interacting with iPhones.

Please watch the demonstration video of the new iOS 18 Beta update with the most recent technological advancements below. We may ask you questions about it later for the **$100 Amazon gift card lottery**.



We will now ask you to choose which smartphone you would like to receive in case you win the lottery.

Recall, that the computer will randomy select an amount of money to offer as an extra payment to switch between phones.

To make sure you get the best option for you, it is important to be **truthful** about what **phone** you like better and the **extra amount of money** you would need to switch.

The following two devices are both priced around $1250.

Please note that you will not receive the phone from the lottery until October.

Which of the following do you prefer?

- ◯ Galaxy S24 Ultra
- ◯ iPhone 16 Pro Max

How much do you value getting your preferred phone?

You said that you would prefer receiving an iPhone 16 Pro Max rather than a Galaxy S24 Ultra.

What is the **smallest amount of money (in US dollars)** that would make you choose the Galaxy S24 Ultra and the money over the iPhone 16 Pro Max?

$ [ ]

What percent of your friends are iPhone (iOS) or Android users?

iPhone	0
Android	0
Other	0
Total	0

What percent of your friends do you think will be iPhone (iOS) or Android users **one year from now**?

iPhone	0
Android	0
Other	0
Total	0

Do you usually resell your old phone?

- ◯ Yes
- ◯ No

Would you plan to resell this phone, in case you win the lottery?

- ◯ Yes
- ◯ No
- ◯ It depends on which phone I get

Currently, the maximum resale value* of the iPhone 15 Pro Max in good condition is around $150 higher than the maximum resale value of the Samsung Galaxy S24 Ultra in good condition. How do you think the maximum resale value of the iPhone 16 Pro Max will compare to the maximum resale value of the Samsung Galaxy S24 Ultra one year from now?

- ◯ I expect the maximum resale value of the Samsung Galaxy S24 Ultra to be higher than the maximum resale value of the iPhone 16 Pro Max.
- ◯ I expect the maximum resale value of the iPhone 16 Pro Max to be higher than the maximum resale value of the Samsung Galaxy S24 Ultra.

*The claim above ($150 price difference) is based on data from Flipsy.com, a company that describes itself as follows. "Flipsy.com is the leading online pricing guide that provides accurate values for phones, tablets, gaming consoles, smart watches, books and other items. Flipsy is used by sellers to determine how much their items are worth and by buyers who are seeking fair prices."

Please specify how much higher in US dollars you believe the maximum resale value of the iPhone 16 Pro Max will be compared to the Samsung Galaxy S24 Ultra one year from now.

$ _____

Thank you for participating in our study.

Note that the upcoming iOS 18 update does not eliminate green bubbles **by itself**. Recent technological advancements, such as a new app called Blue Bubbles, are needed.

The app can be downloaded using the following link: https://bluebubbles.app

Your responses are greatly appreciated and contribute valuable insights to our research. If you have any questions or would like more information about the study, please feel free to contact us.

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