Genuine Choices in Pay or Okay

Examining the role of the options consent, payment and advertisement in pay or okay models

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1. Executive Summary

Background: Media companies are increasingly introducing “consent or pay” models. With this approach, users can either subscribe and pay for tracking and/or advertising free access (pay) or continue using the service for free with tracking and personalized advertisements (consent). This type of consent raises questions regarding the General Data Protection Regulation, particularly whether users are actually offered a free choice.

The present study: This study looks at how people make choices when websites ask them to either pay for access or allow their personal data to be tracked. We explore four main questions: (1) Do users prefer paying to protect their privacy, or do they accept free access that comes with data tracking? (2) Does their willingness to pay depend on the type of site, such as news, social media, or other online services? (3) What happens if users are offered a third option: Free access without tracking, but with generic (non-personalized) ads? (4) Finally, we also ask what price people consider fair for a paid option, what influences their decision to pay, and how their prize estimation changes when they learn about how much revenue websites earn from advertising.

A total of 510 participants between 16 and 65 years of age with diverse educational backgrounds from Austria participated in this study.

Key results: The participants value their data protection: over 70% of respondents reject the idea of companies collecting and analyzing their personal data when accessing media content. Yet, when given the choice between the established pay or consent options around 88% (depending on the media context) opt for the consent option, thus allowing data tracking and processing. Therefore, they seem to be forced into a certain choice through the currently established system that does not align with their convictions. This becomes apparent with the introduction of a free option where non-personalized ads are shown and no data is tracked: When this third option is introduced, the odds of choosing the free version with data collection are about 97% lower. Overall, the paid, ad-free option is the least attractive and is not significantly impacted by the introduction of a third media choice. The free option with personalized advertising is the second least attractive, and the free option with general advertising is the most attractive. The results indicate that the media context does not play a significant role in the preference for the media use choice, even though the possibilities for switching to alternatives and data sensitivity differ between these media contexts.

Upon further investigation into the reasons for paying for a subscription, the results showcase that ad-free access and data protection concern appear to be the most important reasons for paying for online content. High subscription prices and the effort involved in canceling subscriptions are cited as the most relevant reasons against such a subscription.

When asked about the reasonable cost of a paid subscription, participants most often name 0.00€ as appropriate as over 60% of respondents consider any amount to be unreasonable for the pay media choice option. Yet, participants arrive at an average value of €2.35. This

estimate is significantly lower when a threshold value is provided to them, which describes the average amount that media outlets earn per month from advertising revenue. Those with an existing subscription estimate the appropriate cost to be higher, possibly because they know from experience that this corresponds to the current reality. Older, higher educated and wealthier people are willing to pay more for a subscription, so do those who see concern for privacy as a motivation to take out a paid subscription.

Limitations: When interpreting the results of this study, it is important to keep one key limitation in mind: The media choices were assessed using hypothetical scenarios rather than real-world decisions. Therefore, we could only evoke the urgency of the pressure to click on the banner options to a limited extent and also only hypothetically created the different media contexts. Additionally, participants did not incur actual costs or face data tracking of their media use. This likely lead to an overestimation of willingness to pay for privacy and an underestimation of willingness to choose the free media use option without data tracking, which can reach up to 99.9% in real-life situations (Morel et al., 2023).

Conclusion: The study findings indicate that when people have the option to go beyond the “pay or agree” principle and access online content without being tracked with general, non-personalized advertising, they are very likely to do so, aligning with their actual convictions of not wanting to be tracked when using media content.

2. Research Background

While media outlets have been known to play a watchdog role over government practices—for example, by criticizing the government for violating citizens' privacy in cases such as mass surveillance by the NSA or the purchase of personal data from data brokers—they also typically track their readers' online behavior and then share this data with advertising technology companies (Libert, 2019).

They engage in this practice because media companies partly finance themselves through advertising in addition to subscriptions, subsidies, and donations. While media companies earn good money from directly booked and mostly non-personalized or general advertisements, additional ad space is often sold to advertising technology companies. To increase the value of these ads, user data are collected through cookies and similar tracking tools, which are then shared with these companies to deliver personalized advertising (Marotta et al., 2019).

Indeed, the vast majority of websites, social media platforms, and mobile applications systematically monitor the online activities of their users. The resulting data flows are constant and person-specific (Baruh et al., 2017). Consequently, researchers have designated this phenomenon "dataveillance," a subcategory of surveillance that entails the uninterrupted observation of citizens' online activities (Highland, 1988). The most significant downside of continuous data extraction is the decline of informational privacy, including the right to control the collection and dissemination of personal information (Baruh et al., 2017).

Laws such as the General Data Protection Regulation (GDPR, 2016) therefore stipulate that users must have a free choice as to whether or not they consent to data tracking.

In the EU, in line with the GDPR (GDPR, 2016) and the ePrivacy-Directive (Directive on privacy and electronic communications, 2002) websites must obtain user consent for the use of cookies that are not strictly necessary for providing the services of the site. This is typically done via a cookie banner that appears when entering a site, where users can choose whether they agree to the use of their data for purposes such as personalized advertising. Depending on the placement of the banner and how consent is obtained (e.g., users have the option to ignore the banner, provide acceptance through a graphic or visual representation, or accept by default), the percentage of people who agree to the processing of their personal data ranges from 0.1% to 50.8% (Utz et al., 2019).

The way consent is obtained has evolved. Increasingly, media companies are introducing so-called “consent or pay” models. In this approach, users can choose either to subscribe and pay for the protection of their data by accessing media content without advertising and data tracking (pay), or to continue using the service free of charge but with the use of their data for personalized advertising (consent). In other words, users decide between paying with money or with their data. This type of consent raises questions under the GDPR (GDPR, 2016) and the ePrivacy-Directive (Directive on privacy and electronic communications, 2002), particularly regarding whether users are genuinely offered a free choice. Critics argue that when the only alternative to data tracking is paying for access, the voluntariness of consent is questionable. Regulators and courts in the EU are still assessing whether such models fully comply with GDPR requirements (D’Amico et al., 2024).

Opting out of data use and paying instead involves several challenges for users: It is time-consuming and labor-intensive, and it requires disclosing personal data, especially payment information. Also, it can become rather costly because most users visit dozens of websites every month. If users don't want their data to be shared by any of the sites they visit, the costs quickly add up. Every website, whether it offers recipes, world news, or social media, could force users to either consent or pay. The cost of such a subscription by Meta is currently prized between €5.99 and €7.99 per month (Meta, 2024), and thus potentially exceeds the compensation for lost advertising revenue if users do not consent to data tracking: This is based on a US study that concludes that when the user's cookie is available—i.e., data is tracked—media companies' revenues increase by about 4%, which corresponds to an average increase of only $0.00008 per ad (Marotta et al., 2019). Revenues for non-personalized, general ads might therefore at least be in line with the one of personalized ads, which contradicts claims of media sites that personalized advertising, and thus tracking and selling data of their users, is of benefit to users as it “gives people access to personalized products and services regardless of their economic status“ (Meta, 2024) and is necessary to finance the service and content of the site. Providing a third option to the current “consent or pay” principal in which users could choose to consent to free use with non-personalized, general advertising could therefore be a valuable way to balance securing the medium's finances with users' right to data protection.

This study aims to determine the general preference of online users for personal data tracking, and thus establish the basic willingness to consume media content when personal

data is tracked. Furthermore, we aim to examine the users' media use choice regarding "consent or pay" more closely to determine if specific media contexts influence the willingness to pay for media content or to use the free option. We also want to examine how introducing a third option that provides free use without data tracking and non-personalized advertising impacts users' media use choice. Finally, we are interested in the price users would consider reasonable for a paid version, the factors influencing this willingness to pay, and how this willingness changes when confronted with a site's revenue threshold from data sharing:

- **RQ1:** How many respondents disagree with the collection and analysis of personal data and what a) sociodemographics, b) media use frequency, and c) preexisting data protection attitudes and behaviors, affect this opinion?
- **RQ2:** How does the addition of a free media use option with non-personalized advertising to a paid and a free option with personalized advertising affect participants' media use choice (paid vs. free)?
- **RQ3:** How does the media context (news site, social media site, or other site) influence media use choice (paid vs. free)?
- **RQ4:** Which factors, such as a) subscription experience and related motivations, b) sociodemographics, c) media use frequency, and d) preexisting data protection attitudes and behaviors, affect participants' media use choices (paid vs. free)?
- **RQ5:** What prizing for a paid subscription do users deem appropriate, and how is this affected by their a) subscription experience and related motivations, b) sociodemographics, c) media use frequency, and d) preexisting data protection attitudes and behaviors?

3. Method

We conducted an online experiment to examine individuals' disagreement with the tracking and analysis of personal data, their choice of media use in a typical online situation, and their expectation of subscription pricing. For this purpose, we used a 3x2 design that manipulated the media context and the choice options provided under which participants could access the media content.

3.1. Procedure

After participants provided informed consent with regard to the study design, they answered questions about their sociodemographics and media use frequency. After this, participants were asked whether they were in basic agreement or disagreement with their data tracking and processing. The participants then read a brief description of a specific media situation (a so-called vignette). In it, they were presented with the scenario that they wanted to visit a certain type of website. Depending on chance, they received one of three variants (See Table 1):

1. a **news site**, or
2. a **social media site**,
3. any **other site**, such as a recipe or sports site.

Table 1. Vignette describing the media content to be accessed

media content	vignette
News site	Imagine you open the website of a well-known news site to read a current article. You have been using this service for many years. The home page is filled with headlines from politics, business, and culture. A large cover photo catches your attention, with short summaries of the most important news items below.
Social media site	Imagine you open the website of a well-known social media platform to see the latest posts. You have been using this platform for many years and have many contacts on it. The feed is filled with images, videos, and short texts on various topics.
Other site	Imagine you are looking for a recipe and come across a recipe website. This site offers recipe collections with pictures and detailed ingredient lists, as is common on such sites. You have been using this site repeatedly for many years.

Note: For the purposes of this report, the vignette descriptions are provided in English. The participants originally saw the vignettes in German. The original phrasing can be found in the questionnaire in the linked OSF repository: https://osf.io/nq4xj/?view_only=3cb7d9cb431640bda9a1ee7f7163e029

In the next step, participants were asked to specify the conditions under which they would use the content of these described website. There were different scenarios, which were also assigned at random. In one version, participants had to choose between two options as stated in the “consent or pay” principle (D’Amico et al., 2024):

1. **Free use,** but with consent to the processing of personal data for personalized advertising (Free use with personalized advertising \\ You consent to the use of your personal data for advertising purposes. The website remains free of charge for you, but you will be shown personalized advertisements based on your interests and usage behavior. For more information, please refer to the privacy policy.)

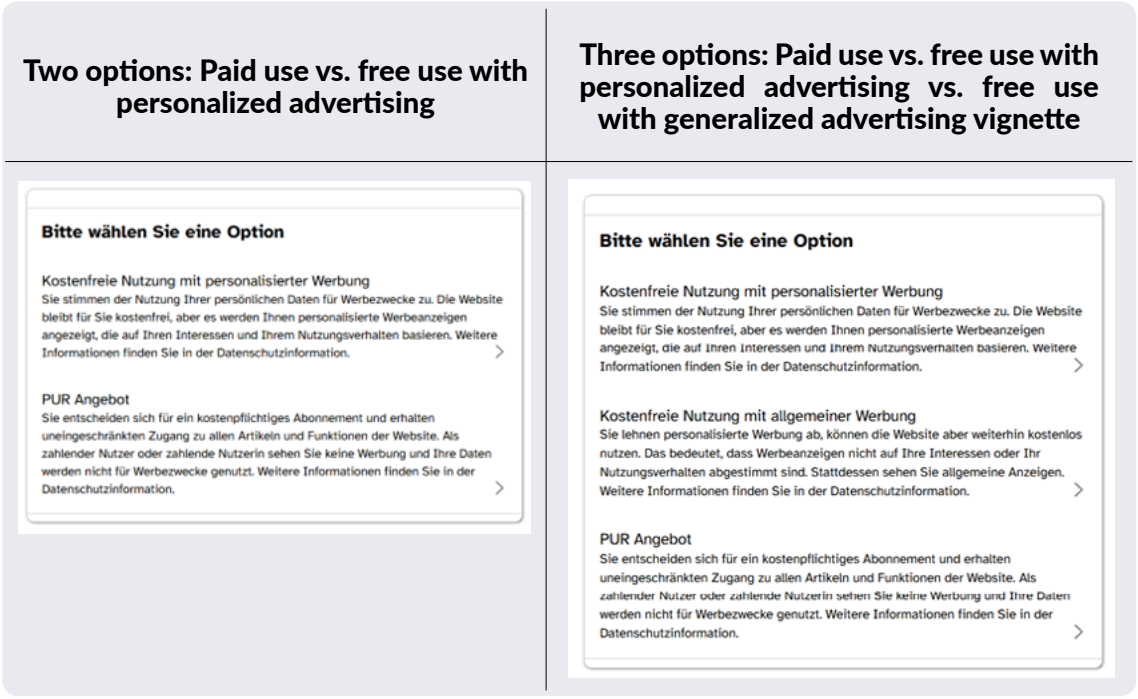
2. **Paid use,** but without data tracking and without advertising. (PUR offer \\ You opt for a paid subscription and receive unlimited access to all articles and features on the web-

site. As a paying user, you will not see any advertisements and your data will not be used for advertising purposes. For more information, please refer to the privacy policy. In the other version, there was an additional third option:

3. **Free use,** without data processing, but with non-personalized (general) advertising. (Free use with general advertising \\ You reject personalized advertising, but can continue to use the website free of charge. This means that advertisements are not tailored to your interests or usage behavior. Instead, you will see general advertisements. For more information, please refer to the privacy policy.)

See Figure 1 for how this banner was implemented in the survey. The order of the choice options was randomized to avoid a primacy or recency effect as a potential explanation for the observed choice behavior.

Figure 1. Banner presenting the media use options



3.2. Sample size calculation

An a priori power analysis was performed using G*Power to determine the required sample size for the planned statistical analyses. For the required logistic regression analyses to evaluate the main outcome variable, media use choice, a mean effect size of $f^2 = 0.15$ and a number of 23 predictors were assumed. To achieve a statistical power of 0.95 ($\alpha = 0.05$), at least 234 participants are required.

To ensure a statistically sound analysis of the research questions and a meaningful comparison between the experimental conditions, the required total sample size was set at a minimum of 500 participants.

3.3. Participants

Austrian participants were recruited via the Bilendi survey institute. A total target of 500 completed questionnaires was set, with quotas defined according to gender (49.5% male, 49.5% female, 1% diverse), age group (five equally distributed age groups between 16-25, 26-35, 36-45, 46-55, 56-65 years old), and level of education (50% below high school diploma [Matura], and 50% with a high school diploma [Matura] and above).

A total of *N = 591* participants followed the invitation to be part of this survey. However, *n = 15* participants declined to participate on the first page of the survey, where we asked for informed consent. Of the participants who continued to complete the questionnaire, *n = 28* terminated their participation prematurely, resulting in missing data for the main target variables relevant to the evaluation of the main research questions. We therefore excluded them from the final sample. We also programmed a quality control check to verify participants' attention to the survey questions ("We want to make sure you are still paying attention. Please click 'Never' to answer this question and continue with the questionnaire"). We excluded all participants who failed this test (*n = 38*). Thus, the final sample size is *N = 510* participants. A visualization of the data cleaning process is shown in Figure 2.

The final sample includes adults aged between 16 and 65 years (*M = 40.33; SD = 13.92*), showing a near to equal distribution between the set five age groups (18.4%-22.2%). Gender was evenly distributed between male and female participants, with 51% (n = 260) identifying as female, 48.6% (n = 248) as male, and 0.4% (n = 2) as diverse. In the sample, 1 person did not provide any details about their level of education, 0.4% (n = 2) stated that they did not (yet) have a school leaving certificate, 8.4% (n = 43) had completed compulsory schooling, and 36.9% (n = 188) had completed an apprenticeship or vocational school. The remaining participants have a high school diploma (29.2%; n = 149) or a university degree (24.9%; n = 127), fulfilling the set education quota. In addition, we asked about the participants gross income of the last year. Of our participants 80 decided not to answer this question. Of the remaining 430 cases 18.6% (n = 95) indicated a gross income of 0-20,000€, 26.5% (n = 135) 20,001-40,000€, 23.3% (n = 119) 40,001-60,000€, 9.0% (n = 46) 60,001-80,000€, 4.5% (n = 23 80,001-100,000€, 1.6% (n = 8) 100,001-120,000€, and 0.6% (n = 4) indicated a gross income of over 120,001€.

Figure 2.
Data cleaning process.

3.4. Measures

We pre-tested the survey on a sub-sample of *N = 57* participants and revised it based on their feedback. Small adjustments were made to the phrasing of the measure assessing the disagreement with the collection and analysis of their personal data. Furthermore, we made small adjustments to the items that examine the motives behind paying for a subscription.

3.4.1. Main outcome variables

To assess RQ1, we asked participants whether they agreed or disagreed with companies collecting and analyzing their online behavior in order to show them personalized advertisements. They also had the option of not commenting on this question. To further assess their disagreement with the collection and analysis of their personal data, we recoded this variable as a dummy variable (1 = disagreement; 0 = agreement or no comment).

To address RQ2-4, we examined participants' media use choices. To do so, we programmed a banner that looks and functions similarly to actual banners currently implemented on media sites (see Figure 1). It also used already established wording to describe the different media use options. Participants' media use choice was based on the option they clicked and confirmed within this banner. Those who saw the two choice condition (*n = 256*) could choose between paid use without data tracking or advertising; and free use with consent to process personal data for personalized advertising. Those in the three choice condition (*n = 254*) additionally had the option to choose free media use with non-personalized (general) advertising and without data processing.

Finally, we were interested in participants' subscription prizing expectations for an advertising-free subscription — that is, how much they would be willing to pay for such a subscription. Participants had the option of giving a specific amount in € or indicating that they found no amount appropriate. In order to employ this variable as a linear outcome, we recoded the responses indicating no amount as €0.

In the second question, we asked again about the amount they would be willing to pay, with the same answer options. However, we provided additional threshold information by sharing that, according to scientific studies, websites earn an average of €0.24 per user per month from advertising. This was our second threshold measure, where we again recoded responses indicating no amount as €0. We excluded three participants from the analysis of this dependent variable, as their cost estimates (€300 and €500) were far outside the range of the other participants (€0–€100) and were therefore considered outliers that could distort the results.

3.4.2. Independent variables

As the dependent variables being assessed may depend on specific media usage patterns, we asked about media use frequency on a four-point scale ranging from 1 = never to 4 = several times a day. Media usage frequency was assessed for:

- newspaper sites (Median = 3.00, Mode = 4)
- TV (including the online media library, Median = 3.00, Mode = 4)
- streaming services such as Netflix, Apple TV, Amazon Prime, and Spotify (Median = 3.00, Mode = 3)
- radio (including online media libraries, Median = 3.00, Mode = 4)
- social media sites (Median = 4.00, Mode = 4)
- and other sites, such as recipe or sports sites (Median = 3.00, Mode = 3).

Only 190 people took advantage of the option to name another medium they use. They mentioned options like Kindle, LinkedIn, Xing, Zoom, YouTube, X and print media. Those who named one of these additional media indicated that they used it seldom (Median = 1.00, Mode = 1). As this option was chosen rarely and had some overlap with the existing media use variables, it was excluded from the full models to avoid missing data and ensure the regression analyses were unaffected by the small number of cases.

In our experimental setting, we focused on three specific media use contexts: news sites, social media sites, and other sites. Since media use decisions (pay option, vs. the free option[s]) may depend both on the context described in the vignettes and on participants' reported frequency of using that specific type of media, we created interaction terms. For example, participants who report using social media very frequently may be more inclined to pay for content when the vignette describes a social media site, while this effect might not apply to news sites or other sites. To reduce multicollinearity and to make the coefficients easier to interpret, the media use variables were mean-centered before creating these interaction terms.

We furthermore assessed participants preexisting data protection attitudes and behaviors. Specifically we asked about privacy protection behavior based on Boerman et al. (2021). This measure consists of nine items describing past privacy protection behavior such as declining to accept cookies when website offers the choice or using the private mode in the browser. We asked how frequently participants had engaged in this behavior in the past two weeks on a 5-point Likert-scale ranging from 1 = never to 5 = very frequently. The nine items were summarized in a mean-score index (α = .84; M = 2.88; SD = 0.94). We also asked about privacy concerns with three statements adopted by the developed measures of Dobber et al. (2019). We asked participants to agree with statements such as "I am worried that my personal data (such as my online surf and search behavior, name, and location) will be abused by others" on a five-point scale ranging from 1 = "I don't agree at all" to 5 = "I fully agree" (mean-score index: α = .84; M = 3.61; SD = 1.05). To assess self-efficacy we employed three items based on Boerman et al. (2021), assessing the participants agreement with the statements like "I am able to protect my personal information, such as my browsing behavior, on the Internet" on a scale ranging from 1 = "I don't agree at all" to 5 = "I fully agree". Again, the statements were summarized in a mean-score index (α = .81; M = 2.83; SD = 1.01).

It was also relevant in the context of this study to ask about pre-existing experience with paid subscriptions. We asked: Have you already taken out a subscription (no advertising, no processing of your data—but with monthly payment) in order to be able to use online

content without data processing? Only 10.8% (*n = 55*) indicated to already have paid for a subscription to protect their data and access ad free content in the past. We then asked about the motivations that speak for and against having such a subscription. Five statements listed potential reasons for such a subscription, e.g., "If I use a website very frequently, it's worth it to me not to be tracked there". Twelve statements listed potential reasons against such a paid subscription, e.g., "I visit too many sites and can't pay everywhere". We asked participants to indicate their agreement with these statements on a scale from 1 = "I don't agree at all" to 5 = "I fully agree". See Table 2 for a list of all statements, the mean which is the average agreement, and the median, which represents the middle of the distribution, meaning half of the participants reported a lower value and half a higher value

Regarding the motivations for a paid subscription, the two statements that essentially named subscriptions as a way of avoiding advertisements received the highest average agreement. The highest average agreement regarding motivations against such a subscription concerned the high subscription prices, the effort involved in cancelling subscriptions, and the fact that the same content is available for free. The lowest overall agreement was related to people wanting to financially support online services, worrying about the usability of the sites, and them simply not caring about their data and having given up on protecting it.

To reduce complexity, and instead of including each individual statement, we conducted an exploratory factor analysis. The analysis revealed four underlying motivational factors that together explained 62.07% of the variance (KMO = 0.78, Bartlett's test $p < .001$). Five statements were excluded because they showed double loadings. The four underlying factors identified were cost concerns; indifference about data protection; subscription effort and data protection and advertising concerns. As the last factor comprises two relevant topics: data protection and concerns about advertising, the factor was split up into these two underlying concepts. For each factor the individual items were combined into mean-score indices. Three of the four factors demonstrated acceptable reliability, with Cronbach's alpha values around 0.7 or higher. However, the reliability of the indifference about data protection factor fell below this threshold, which limits the internal consistency.

Table 2. Descriptive results and underlying factor for all reasons for an against a paid subscription.

	M	*SD*	*Mdn*	Factor	*M*	*SD*	α
Reasons for a paid subscription							
I want to financially support online services.	2.04	1.24	1.50	excluded			
I want to ensure and support the quality of online content.	2.96	1.36	3.00	excluded			
I'm afraid that the website won't work properly otherwise.	2.25	1.33	2.00	excluded			
I don't want my data to be used for advertising purposes.	3.60	1.37	4.00	Data protection	3.41	1.09	.69
If I use a website very frequently, it's worth it to me not to be tracked there.	3.05	1.40	3.00				
I don't want to see any ads at all (whether personalized or not).	3.59	1.41	4.00	Advertising concerns	3.59	1.41	4.00

	M	*SD*	*Mdn*	Factor	*M*	*SD*	α
Reasons against a paid subscription							
I visit too many sites and can't pay everywhere.	4.05	1.27	5.00	excluded			
I don't care if my data is used.	2.34	1.30	2.00	excluded			
The prices are too high.	4.29	1.01	5.00				
I don't see why I should pay for content that used to be free.	4.28	1.05	5.00	Cost concerns	4.17	0.92	.80
I don't think it's fair to pay for content that other users have created for free.	3.93	1.20	4.00				
I always click on the button that takes me to the content the fastest.	3.16	1.38	3.00				
I don't usually read such banners in detail and therefore don't know what my consent is being sought for.	2.93	1.41	3.00	Indifference about data protection	2.92	1.01	.58
I've given up on protecting my data.	2.67	1.31	3.00				
I don't want to take out a subscription; canceling subscriptions takes too much time and effort.	4.14	1.14	5.00				
I don't want to create an account just for this.	3.98	1.23	4.00	Subscription effort	3.86	0.95	.74
I don't want to enter my payment information.	3.91	1.29	4.00				
It's too much effort for me to take out a subscription.	3.40	1.38	3.00				

Note: M (Mean): The average value; *SD* (Standard Deviation): How much do the values around the mean vary. A greater SD indicates that the values are more spread out; *Mdn* (median): The value that splits the data in the middle; α (Cronbach's Alpha): A measure of reliability that shows how well the items in a scale are connected (closer to 1 means more reliable).

3.5. Data analysis

To test RQ1 regarding the disagreement with the collection and analysis of personal data use we conducted a descriptive frequency analysis and a logistic regression analysis to further examine the underlying factors of this disagreement. We included sociodemographics (gender coded as 1 = female; 0 = male and other; age; education coded as 1 = High school degree and above 0 = middle school or less; and the income group), the six variables indicating media use frequencies, and finally the measures indicating preexisting data protection attitudes and behaviors as potential predictors for this outcome variable.

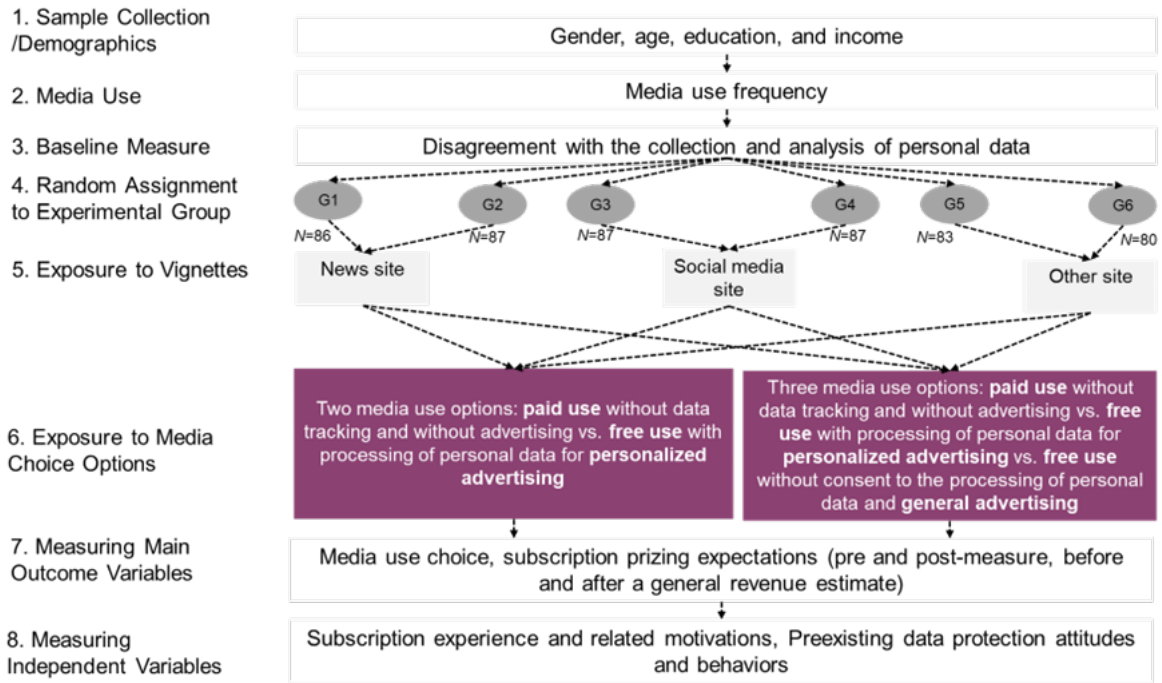
To examine RQ2-4 which concerns the participants' choice of media use option we conducted a descriptive frequency analysis and two logistic regression analysis (one comparing the paid subscription option with the two free use options and the other comparing the free option with data tracking and personalized ads, with the free, general advertising option and the paid subscription) to further examine the underlying factors of media use choice. We included the experimental conditions of media use context (news site vs. other site and social media vs other site) and the media use options (three choice option vs. two choice option) as our dependent variables. We furthermore included interaction terms of the conditions to estimate whether the number of media use options as a deciding factor might additionally rely on the media context. Furthermore, we included the variables assessing subscription experiences and related motivations, sociodemographics, the three mean-centered media use frequencies relating to the described media contexts and the corresponding interaction terms, and finally the measures indicating preexisting data protection attitudes and behaviors as potential predictors.

Finally, to examine RQ5-6 which asks about the appropriate subscription cost estimates, we conducted a descriptive frequency analysis and a linear regression to further explore which factors explain this estimate. We included variables assessing subscription experiences and related motivations, sociodemographics, the six variables indicating media use frequencies, and finally the measures indicating preexisting data protection attitudes and behaviors as potential predictors. In addition, to see whether sharing a threshold on what websites earn an average by advertising per month in- or decreases the appropriate subscription cost estimate, we conducted a paired t-test comparing the participants' initial estimate and the one provided after sharing the threshold.

The full dataset and the analysis script are available in the following OSF repository: *https://osf.io/nq4xj/?view_only=3cb7d9cb431640bda9a1ee7f7163e029*.

Please note that all statistical indicators mentioned in the text and in the tables are explained in the table legends.

Figure 3. Flowchart of the experimental design and implementation.



4. Results

4.1. Randomization Check

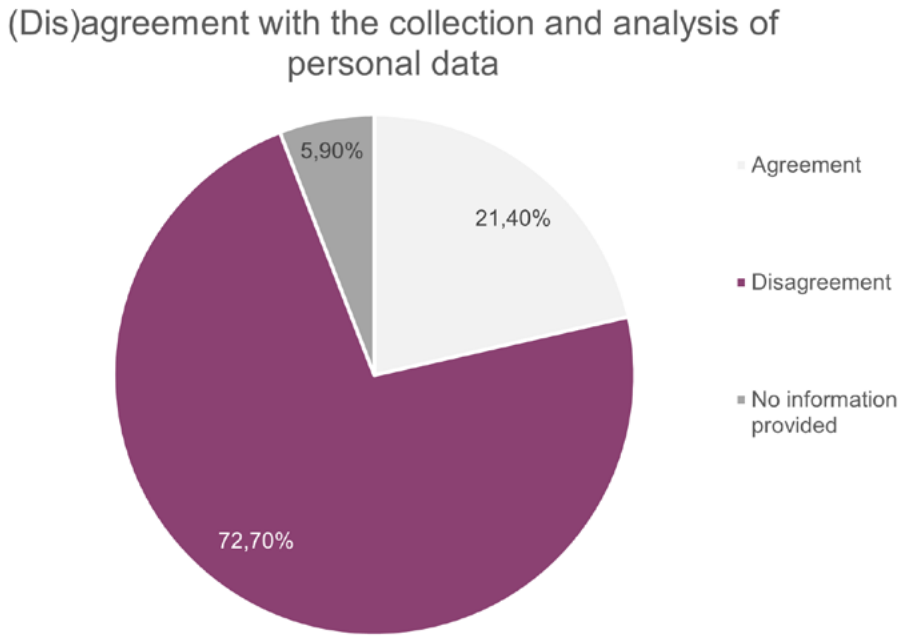
We conducted randomization tests to examine differences in the distribution of questionnaire completion time, media use frequency, age, income, gender, education level, and existing subscriptions between the experimental conditions (for gender, education level, and existing subscriptions, we used a cross-tabulation analysis with a chi-square test; for questionnaire completion time, media use, age, and income, we used Analyses of Variance). We found no significant differences in the distribution of these variables between conditions. Furthermore, the experimental conditions are composed of a similar number of individuals (see Figure 3).

4.2. Main Analysis

4.2.1 Disagreement with the collection and analysis of personal data

To investigate research question 1, respondents were asked about their disagreement or agreement with companies collecting and analyzing their personal data. 21.4% (*n = 109*) of respondents would agree to such use, while 72.7% (*n = 371*) would reject it. 30 people (5.9%) do not want to comment on this question (Figure 4).

Figure 4. Descriptive results on participants agreement and disagreement of their personal data tracking and processing



Note: N= 510

The disagreement with such data use can be explained by the respondents' privacy concerns: individuals with stronger concerns have odds of rejecting this data use that are about 50% higher (LLCI = 1.18, ULCI = 1.90). People with strong data protection behavior are also less willing to consent to this form of data collection. Their odds of disagreeing with such use are about 39% higher (LLCI = 1.07, ULCI = 1.82). In contrast, people who feel a high degree of self-efficacy in protecting their data show less rejection: their odds of disagreeing with this kind of data use are about 30% lower (LLCI = 0.54, ULCI = 0.89). The sociodemographic data collected (gender, age, education level, and income) has no influence. Among media usage habits, it is noticeable that people who frequently use streaming services in particular are less reluctant to disagree to this data use: their odds of refusal are about 30% lower (LLCI = 0.55, ULCI = 0.91). See Table 3 for the full analysis.

4.2.2 Media use choice

For research questions 2 and 3, we examine which media usage options the respondents would agree to in a described media usage context (news site, social media site, other site) if they are given a choice between a paid use and free use with data tracking and personalized advertising, or a third option, namely free use without data tracking and non-personalized advertising.

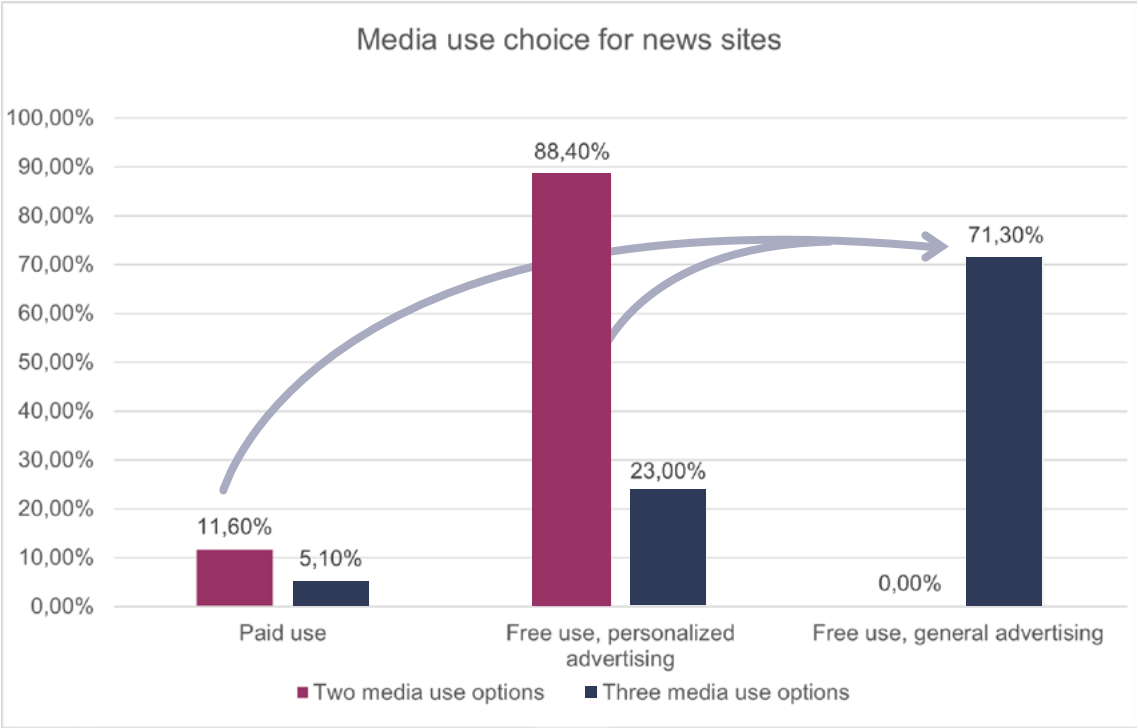
Table 3. Results of the logistic regression analyses regarding the unwillingness to consent to personal data use compared to agreement with data use and no statement.

	Unwillingness to consent to personal data use compared to agreement with data use and no statement.				
	b	*SE*	*OR*	*LLCI*	*ULCI*
Sociodemographic					
Male vs. female	0.08	0.25	1.08	0.66	1.76
Age	0.02	0.01	1.02	1.00	1.04
High school degree and above vs. middle school or less	0.22	0.25	1.25	0.77	2.03
Income	0.07	0.10	1.07	0.87	1.31
Media Use Frequency					
News paper site use	-0.03	0.14	0.97	0.73	1.29
TV use	-0.11	0.14	0.90	0.68	1.18
Streaming services use	-0.35**	0.13	0.71	0.55	0.91
Radio use	-0.18	0.13	0.84	0.66	1.07
Social media site use	0.16	0.15	1.18	0.88	1.58
Other site use	-0.20	0.15	0.82	0.61	1.10
Preexisting Data Protection Attitudes and Behaviors					
Privacy protection behavior	0.33*	0.14	1.39	1.07	1.82
Privacy concerns	0.40***	0.12	1.50	1.18	1.90
Self-efficacy	-0.37**	0.13	0.69	0.54	0.89
Constant	0.67	1.06	1.96		
Observations (*N*)			428		

Note. n = 82 missing values; Reference groups for categorial variables were assessed based on lowest choice of paid media use option according to a descriptive analysis; Statistical difference marked with $^{*}p < 0.05$; $^{**}p < 0.01$; $^{***}p < 0.001$ *b*: Size and direction of the effect (positive = increases odds; negative = decreases odds); *SE*: Precision of the estimate; *OR* (Odds ratio): How much the odds of the outcome change when the factor increases by one unit (OR > 1 = higher odds; OR < 1 = lower odds); *LLCI/ULCI* (Lower/Upper Limit of Confidence Interval): The range within which the true effect likely falls, with a narrower range indicating more certainty. *p*: Likelihood that the result is due to chance. A smaller *p*-value indicates that the result is less likely to be due to chance, thus indicating its significance.

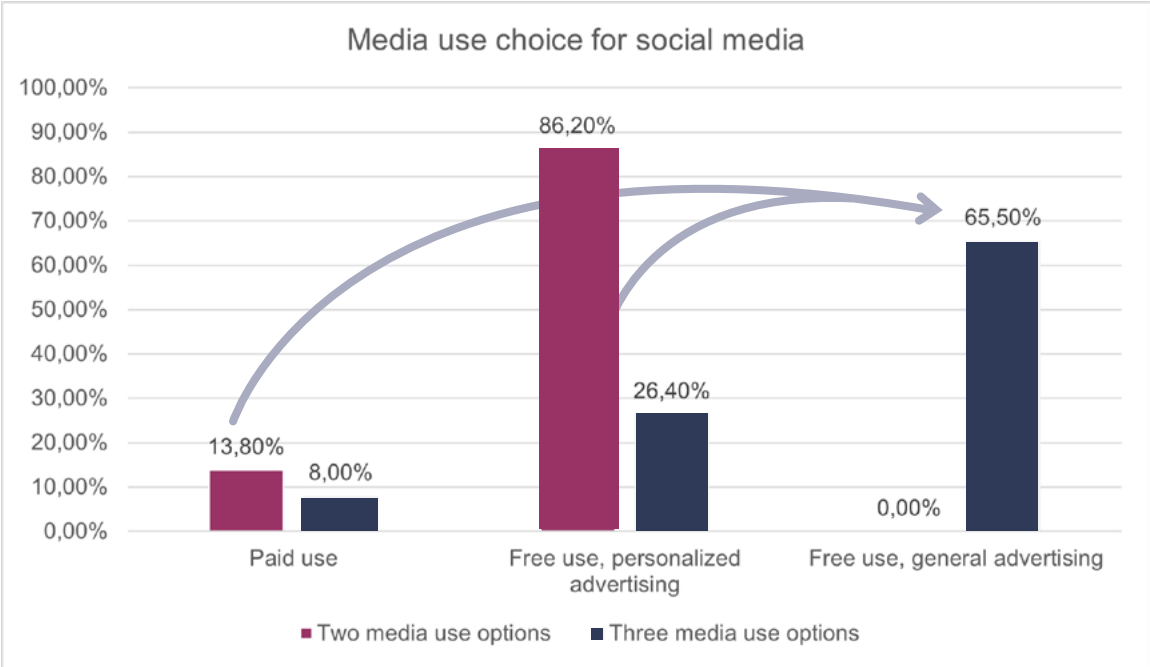
The descriptive analysis shows that the media usage situation does not make a substantial difference in the choice of usage option. In all cases, the paid option is the least popular. Between 1.3% and 13.8% would choose this option, depending on the media context and available media choice options. Free use with personalized advertising ranges between 91.6% and 88.4% if there are only two choice options available and sink drastically to between 23.00% to 27.5% if a third choice option is introduced. If this third option is available, depending on the media context, 65.5% to 71.3% would opt for free use with general advertising without data tracking (see Figure 5-7).

Figure 5. Descriptive results media use choice by media context: News sites



Note: N= 510

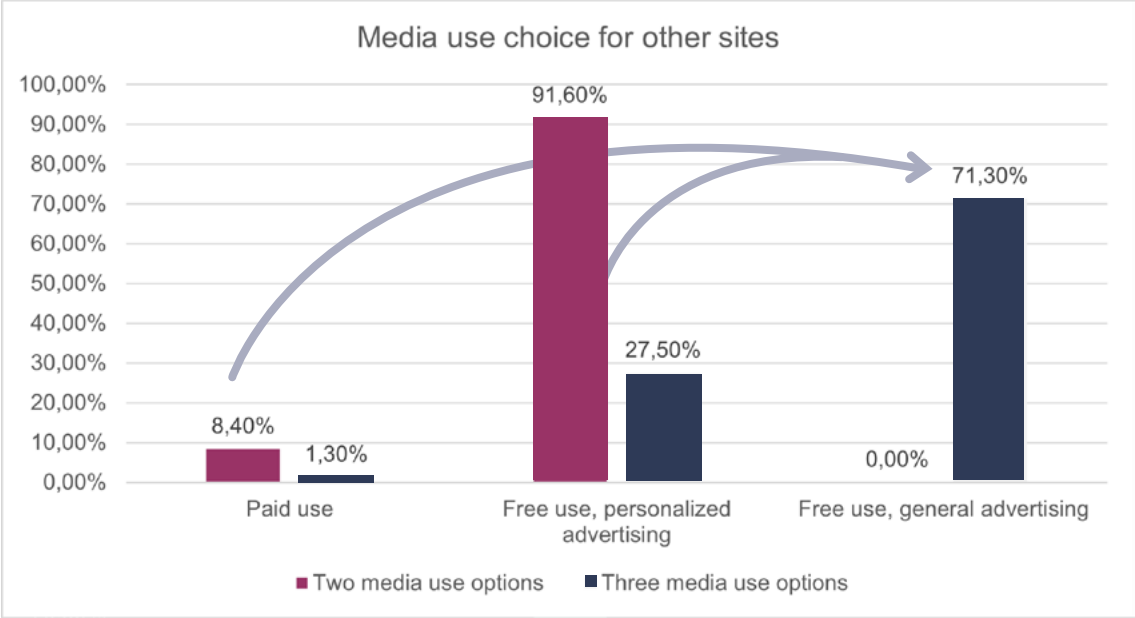
Figure 6. Descriptive results media use choice by media context: Social media



Note: N= 510

Figure 7. Descriptive results media use choice by media context: Other sites

Note: N= 510



A closer analysis of the choice of paid subscription shows that neither the media context nor the introduction of a third option has any influence on whether respondents opt for or against a paid subscription. Even the fact that they have already taken out such a subscription in the past or the reasons they give for or against a subscription cannot explain beyond chance whether they would be willing to pay for ad-free use.

However, with regard to existing attitudes and behaviors in the area of data protection, we find that people with a higher sense of self-efficacy in protecting their data have odds of choosing a paid subscription which is 67% higher (LLCI = 1.10, ULCI = 2.54). Age, gender, education level, and income, on the other hand, have no measurable influence.

Among media usage habits, it is noticeable that people who use social media frequently are less likely to choose a paid subscription: their odds are about 48% lower (LLCI = 0.31, ULCI = 0.86). There is no interaction between the type of media context described in the vignette and previous usage behavior. People who spend a lot of time on social media are therefore not automatically more likely to choose a paid subscription for a social media platform. See Table 4 for the full analysis.

When analyzing the choice of free use with personalized advertising based on data tracking, we find that the type of media context has no influence on whether respondents chose this option. However, the introduction of a third option has a clear effect: when free use without data tracking but with general advertising is offered, the odds of choosing the data tracking-based free version are about 97% lower (LLCI = 0.01, ULCI = 0.09). The interaction effect of media context and choice condition does not have an impact.

Table 4. Results of the logistic regression analyses regarding the choice of the paid media use option compared to the two free media use options.

	Paid media use option compared to the two free media use options				
	b	*SE*	*OR*	*LLCI*	*ULCI*
Experimental Conditions					
News site vs. other site	0.05	0.66	1.06	0.29	3.85
Social media site vs. other site	0.46	0.64	1.58	0.45	5.53
Three choice option vs. two choice option	-2.03	1.16	0.13	0.01	1.28
News site*Three choice option	1.88	1.36	6.58	0.46	93.75
Social media site *Three choice option	1.83	1.30	6.23	0.49	78.85
Subscription Experience and Related Motivations					
Existing subscription vs. no subscription	0.84	0.50	2.30	0.87	6.12
Subscription effort	-0.35	0.25	0.71	0.42	1.16
Data protection	0.38	0.23	1.46	0.92	2.30
Advertising concerns	0.00	0.17	1.00	0.72	1.40
Indifference about data protection	0.06	0.20	1.06	0.71	1.59
Cost concerns	0.08	0.25	1.08	0.66	1.78
Sociodemographic					
Male vs. female	0.16	0.43	1.17	0.50	2.74
Age	-0.02	0.02	0.98	0.95	1.02
High school degree and above vs. middle school or less	0.53	0.43	1.70	0.73	3.95
Income	0.21	0.16	1.24	0.91	1.68
Media Use Frequency					
News paper site use (mean centered)	-0.04	0.30	0.96	0.53	1.73
Social media site use (mean centered)	-0.66*	0.26	0.52	0.31	0.86
Other site use (mean centered)	0.25	0.25	1.29	0.79	2.09
News paper site use*news site condition	-0.18	0.45	0.83	0.34	2.02
Social media site*social media site condition	0.37	0.38	1.44	0.68	3.06
Preexisting Data Protection Attitudes and Behaviors					
Privacy protection behavior	0.08	0.23	1.08	0.68	1.71
Privacy concerns	0.08	0.23	1.08	0.69	1.71
Self-efficacy	0.51*	0.21	1.67	1.10	2.54
Constant	-5.58**	1.74	0.01		
Observations (*N*)			428		

Note. $n = 82$ missing values; Reference groups for categorial variables were assessed based on lowest choice of paid media use option according to a descriptive analysis; Statistical difference marked with $^{*}p < 0.05$; $^{**}p < 0.01$; $^{***}p < 0.001$
b: Size and direction of the effect (positive = increases odds; negative = decreases odds); *SE*: Precision of the estimate; *OR* (Odds ratio): How much the odds of the outcome change when the factor increases by one unit (OR > 1 = higher odds; OR < 1 = lower odds); *LLCI/ULCI* (Lower/Upper Limit of Confidence Interval): The range within which the true effect likely falls, with a narrower range indicating more certainty. *p*: Likelihood that the result is due to chance. A smaller *p*-value indicates that the result is less likely to be due to chance, thus indicating its significance.

Table 5. Results of the logistic regression analyses regarding the choice of the free media use option with personalized advertising compared to the paid and the free media use option with general advertising.

	Free media use option with personalized advertising compared to the two other media use options				
	b	*SE*	*OR*	*LLCI*	*ULCI*
Experimental Conditions					
News site vs. other site	0.02	0.62	1.02	0.30	3.44
Social media site vs. other site	-0.37	0.59	0.69	0.22	2.20
Three choice option vs. two choice option	-3.56***	0.56	0.03	0.01	0.09
News site*Three choice option	-0.45	0.77	0.64	0.14	2.85
Social media site *Three choice option	0.12	0.73	1.13	0.27	4.72
Subscription Experience and Related Motivations					
Existing subscription vs. no subscription	0.32	0.45	1.37	0.57	3.31
Subscription effort	0.10	0.17	1.10	0.79	1.54
Data protection	-0.21	0.15	0.81	0.61	1.08
Advertising concerns	-0.14	0.12	0.87	0.69	1.09
Indifference about data protection	0.09	0.15	1.09	0.82	1.46
Cost concerns	-0.27	0.17	0.76	0.54	1.07
Sociodemographic					
Male vs. female	-0.06	0.31	0.94	0.51	1.73
Age	0.01	0.01	1.01	0.98	1.03
High school degree and above vs. middle school or less	-0.40	0.30	0.67	0.37	1.21
Income	-0.01	0.12	0.99	0.78	1.26
Media Use Frequency					
News paper site use (mean centered)	-0.16	0.20	0.86	0.58	1.26
Social media site use (mean centered)	0.53*	0.22	1.69	1.09	2.62
Other site use (mean centered)	0.19	0.18	1.20	0.85	1.71
News paper site use *news site condition	0.31	0.32	1.36	0.72	2.55
Social media site*social media site condition	-0.35	0.35	0.70	0.36	1.39
Preexisting Data Protection Attitudes and Behaviors					
Privacy protection behavior	-0.49**	0.17	0.61	0.44	0.86
Privacy concerns	-0.23	0.16	0.80	0.59	1.08
Self-efficacy	0.03	0.15	1.03	0.77	1.37
Constant	6.43***	1.29	620.200		
Observations (*N*)			428		

Note. $n = 82$ missing values; Reference groups for categorial variables were assessed based on lowest choice of paid media use option according to a descriptive analysis; Statistical difference marked with $^{*}p < 0.05$; $^{**}p < 0.01$; $^{***}p < 0.001$ *b*: Size and direction of the effect (positive = increases odds; negative = decreases odds); *SE*: Precision of the estimate; *OR* (Odds ratio): How much the odds of the outcome change when the factor increases by one unit (OR > 1 = higher odds; OR < 1 = lower odds); *LLCI/ULCI* (Lower/Upper Limit of Confidence Interval): The range within which the true effect likely falls, with a narrower range indicating more certainty. *p*: Likelihood that the result is due to chance. A smaller *p*-value indicates that the result is less likely to be due to chance, thus indicating its significance.

Whether people have already taken out a paid subscription is also irrelevant to this media use choice. The decisive factor, however, are preexisting data protection attitudes and behaviors. People with more data protection-oriented behavior have odds of choosing this option that are about 39% lower (LLCI = 0.43, ULCI =0.86).

Age, gender, educational level, and income, on the other hand, have no measurable influence. Among media usage frequency, it is noticeable that people who frequently use social media are more likely to choose this free option: their odds are about 69% higher (LLCI = 1.09, ULCI = 2.61) compared to the other two usage options. There is no interaction between the media context and previous usage behavior. Frequent social media users do not automatically opt for the personalized free version more or less often when it is offered specifically in the context of a social media site. See Table 5 for the full analysis.

4.2.3 Prizing expectations for a paid subscription

To address the final research questions (RQ5 & RQ6) we ask about prizing expectations for a paid subscription. Participants estimate the appropriate mean cost at €2.53 (*SD = 6.95*), though it is important to note that 60.7% (*n = 308*) out of the 507 valid cases, indicate that they find any kind of cost inappropriate.

A closer analysis of the original cost estimate shows that people who have already made such a subscription in the past estimate the appropriate price to be significantly higher (β = 0.24). With regard to the motives for or against such a subscription, those who cite high costs as a motive against taking out such a subscription are significantly less willing to spend a lot on such a subscription (β = -0.11). Yet those who are motivated by privacy concerns to take out a subscription are willing to pay more (β = 0.12). With regard to existing attitudes and behaviors toward data protection, those with high self-efficacy are also willing to pay higher prices for such a subscription (β = 0.14).

Media usage patterns shows no above-chance relationship with cost estimates. However, among the sociodemographic data surveyed, younger people show a significantly lower (β = -0.14) willingness to pay more for such a subscription, while people with a high school degree and above (β = 0.10).and higher-income respondents show a significantly higher willingness (β = 0.16). See Table 6 for the full analysis.

After we asked their initial estimate of cost to pay per month for such a subscription, we asked participants to estimate the cost again, after being told the average amount that media providers earn per month from advertising revenue (€0.24). The estimated cost of the subscription falls to €1.49 (*SD = 4.04*), though the number of people considering any cost inappropriate remains about the same compared to the initial prizing expectation (59.6%, *n=302*). Still, this is a significant drop, and the disclosure of a threshold value has a moderate effect on the prizing expectations (Cohen's *d = 5.49*).

Table 6. Overview of the results of the linear regression analyses on the cost estimate.

	Cost estimate			
	β	*b*	*SE*	*t*
Subscription Experience and Related Motivations				
Existing subscription vs. no subscription	0.24***	5.78	1.10	5.25
Subscription effort	-0.04	-0.32	0.41	-0.79
Data protection	0.12*	0.75	0.34	2.22
Advertising concerns	-0.02	-0.09	0.27	-0.36
Indifference about data protection	0.06	0.41	0.34	1.22
Cost concerns	-0.11*	-0.88	0.41	-2.15
Sociodemographic				
Male vs. female	-0.00	-0.06	0.71	-0.09
Age	-0.14**	-0.07	0.03	-2.62
High school degree and above vs. middle school or less	0.10*	1.42	0.71	2.00
Income	0.16**	0.91	0.29	3.17
Media Use Frequency				
News paper site use	-0.08	-0.63	0.40	-1.58
TV use	0.09	0.73	0.39	1.84
Streaming services use	0.07	0.47	0.35	1.34
Radio use	-0.01	-0.10	0.35	-0.30
Social media site use	-0.04	-0.34	0.42	-0.80
Other site use	0.09	0.76	0.43	1.78
Preexisting Data Protection Attitudes and Behaviors				
Privacy protection behavior	-0.03	-0.21	0.40	-0.53
Privacy concerns	-0.05	-0.35	0.38	-0.94
Self-efficacy	0.14**	1.06	0.34	3.09
Constant		0.31	3.28	.09
Observations (*N*)		425		

Note: $n = 85$ missing values; $^{*}p < 0.05$; $^{**}p < 0.01$; $^{***}p < 0.001$;

β: Standardized effect: Allows comparison on which factors matter more; *b*: Size and direction of the effect. Positive means increases. Negative means decreases; *SE*: Precision of the estimate; *t*: Strength of the evidence for the effect; *p*: Likelihood that the result is due to chance. A smaller *p*-value indicates that the result is less likely to be due to chance, thus indicating its significance.

5. Discussion

The findings of the study indicate a reluctance to pay for privacy to access online content, with around 60% of respondents deeming any amount to be unreasonable for an ad free subscription to media content, where personal data is not tracked. Thus, the majority prefers free access to media content, yet this access is still accompanied by a demand for data protection. A significant proportion of individuals—more than 70%, in fact—express their disapproval of the practice of companies collecting and analyzing their personal data. Which is somewhat in line with previous studies that depending on the privacy banner wording and functionality show that agreement with data processing ranges between 0.1% to 50.8% (Utz et al., 2019). The rejection of data processing can be attributed to respondents' prevailing privacy concerns and established privacy behaviors. Individuals expressing concern about privacy issues and already engaging in online behaviors that protect their data demonstrate a higher level of disagreement with data use. A noteworthy finding is that individuals with high self-efficacy regarding their data, i.e., those who believe they can protect their data themselves, exhibit higher levels of agreement with the collection and analysis of their personal data by companies. This phenomenon could be indicative of an overestimation of their abilities, leading to a false sense of security based on their perceived capabilities (Wagner & Mesbah, 2019). In regard to the frequency of media consumption, users of streaming services exhibit a higher probability of concurrence with data collection practices. This could be because a more personalized offering in a streaming service (e.g., suggestions for new series and movies based on previous behavior) increases satisfaction and user-friendliness of such a service (Ahmed & Aziz, 2025), thus highlighting the benefits of collecting and analyzing personal data.

When analyzing which media usage options our participants would choose, we find that the media context we had described to them in our vignettes do not actually play a major role. In all media contexts the paid, ad-free option is the least attractive, followed by the free option with personalized advertising, and finally, the most attractive option is the free option with general advertising. Thus, taking out a paid, data-secure subscription does not seem to be very attractive to online users, especially those who are very active on social media. Only those who are confident in their ability to protect their own data show a greater willingness to opt for the paid subscription option. This suggests that they believe in their ability to protect their privacy by being potentially willing to pay for it.

Interestingly, the introduction of a third option, which expanded the established “pay or consent” principle to include another free option with general advertising, have little impact on people's willingness to pay for access to online content without being tracked. However, it does have a major impact on whether people opt for the established free option, where their data is collected and they see personalized advertising: when free use without data collection but with general advertising is offered as an option, the odds of choosing the free version with data collection are around 97% lower. Beyond the factor of the choices offered, people with more privacy-oriented behavior in the past tend to avoid this established free version and instead choose either the paid option or, if possible, the free option with general advertising. Interestingly, frequent users of social media sites show a particular

preference for the established free media usage option with personalized advertising based on data tracking, when comparing it to the pay option and the free option with general advertising.

Upon further investigation into the reasons for paying for a subscription, we find that avoiding advertising and not wanting to be tracked seem to be the most important motivating factors. When asked why participants had not yet taken out such a subscription, they often cite the high subscription prices, the effort involved in canceling subscriptions, and the fact that the same content is available for free. The statement that people simply do not care about their data and have given up on protecting it receives the least agreement. So, while data secure, advertising free access appears to be the most important reason for paying for online content, those who are not willing to pay still do not want to do so at the expense of their data security.

Participants arrive at an average value of €2.35 when considering the estimated reasonable cost of a paid subscription, though they most often (around 60%) cite 0.00 € as appropriate. The estimate falls significantly when they are given a threshold describing the average amount that media providers earn per month from advertising revenue. Those with an existing subscription estimate the cost to be higher, possibly because they know from experience that this is the current reality. Those who see high costs as a reason not to subscribe are naturally less inclined to spend a lot on a subscription. Yet, those who see concern for privacy as a motivation to take out a paid subscription estimate the appropriate cost higher. Also, higher income, age and education is positively associated with the estimated reasonable subscription cost. People with a high sense of self-efficacy are also willing to pay higher prices, suggesting that they believe in their ability to protect their privacy by potentially being willing to invest in doing so.

6. Limitations

This study has a number of limitations. First, although the participants were diverse in terms of age, gender, and educational background, we only worked with a sample of Austrian participants. This study cannot therefore answer the question of whether there are country-specific differences in the assessment of the use of personal data and the willingness to pay for advertising free content and data protection.

Secondly, the media context examined in this study was based on vignettes and is therefore only able to evoke the actual urgency of the pressure to click on the banner options offered to a limited extent, which is present in an actual media usage decision. In a real-world setting, users might, for example, be searching for a specific recipe or see the headline of an article that they want to read in its entirety, and only then are they faced with the choice of whether access to this content is worth the cost in terms of money or data. Furthermore, the design is only of limited external validity with regard to investigating the participants' willingness to pay, as no actual costs were incurred, which may even have led to an overestimation of the participants' willingness to choose the pay option (e.g. 8% williness to

pay for social media in the study, compared to 0.007% in real-life data). There may also be. There may also be an overestimation of the free option with data tracking compared to the free option without data tracking. Due to the study setting, participants knew their media use data was not actually being collected. However, what increases the external validity of the design is the forced exposure approach. As with a real media usage decision, all participants had to engage with the banner in order to continue.

Third and finally, the placement and wording of the media use options in this design were kept constant in all conditions. However, the wording, for example, how much importance is given to data protection as opposed to advertising free usage, can be crucial in eliciting a particular media choice behavior (Utz et al., 2019). It was beyond the scope of this study to explore this factor further. Additional empirical approaches, such as eye-tracking studies to track how long and how intensively users engage with the banner options, as well as further designs that examine different wording options, could be useful in bringing more clarity to this issue in the future.

7. Conclusions

Our findings show that when people have the option to go beyond the “pay or agree” principle and access online content for free with general, non-personalized advertising, they are very likely to overwhelmingly chose the option with non-personalized adverting.

This suggests that, although there is general skepticism about advertising and a concern for data security, the advantages of a paid subscription are indeed seen in this ad-free, data-secure offering, there is still no great general willingness to pay for data privacy in any media context. However, this does not mean that online users do not value their personal data and are willing to accept that their personal data is tracked when accessing media content. These results intensify criticism of the current “pay or consent” principle (D’Amico et al., 2024), as users currently have no alternative means of conveying the value of their personal data other than paying for it.

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