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Feeling watched:
*The impact of perceived surveillance and privacy
concern on consumer resistance to synced
advertising*

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Abstract

As synced advertising, a personalization strategy where content is coordinated across multiple devices in real time, becomes more common, concerns about data use and consumer privacy continue to grow. This study investigates how awareness of synced advertising influences perceived surveillance and consumer resistance, and how these relationships are shaped by individual privacy concern and privacy cynicism. Drawing on persuasion knowledge theory and reactance theory, a quantitative study was conducted using an online survey with a final sample of 122 participants. A moderated mediation model (PROCESS Model 21) was used to test the proposed relationships. The results show that awareness of synced advertising significantly increases perceived surveillance, particularly among individuals with high privacy concern. Perceived surveillance, in turn, leads to increased consumer resistance. No direct relationship was found between awareness and resistance, suggesting that resistance is primarily driven by surveillance perceptions rather than awareness itself. Privacy cynicism did not significantly moderate the relationship between perceived surveillance and resistance, possibly due to sample characteristics. These findings indicate that synced advertising can evoke psychological discomfort and resistance, particularly among privacy-sensitive consumers. The study highlights the importance of transparency, real user control, and privacy-sensitive targeting strategies for marketers, and offers implications for policymakers aiming to regulate personalized advertising practices.

Keywords: Synced advertising, consumer resistance, perceived surveillance, privacy concern, privacy cynicism, personalization, digital marketing

1. Introduction

There is an ongoing rapid development in personalization technologies which enables companies to collect, use, and share consumers' personal data. Several personalized advertising strategies exist which collect data on consumer behavior online, such as purchase history, online searches, and media behaviors, in order to create targeted personalized advertisements (Smit, Van Noort & Voorveld, 2014). Looking at it from a consumers' perspective, the act of sharing data could be seen as a trade-off between perceived benefits and costs (Culnan & Armstrong, 1999). Consumers make the decision to share personal data if the evaluation of the benefits received are greater than the costs (Culnan & Armstrong, 1999). Consumers have shown to appreciate personalized offerings since it can lead to increased user satisfaction, enhanced online experience, and aid in the consumer's decision-making process (Liang, Lai & Ku, 2006; Hong & Tam, 2006). However, whilst companies collect more and more data, consumers' privacy concerns about sharing personal data on the internet has also grown (Daems, De Pelsmacker & Moons, 2019). The data collection strategies are criticized for invasions of privacy (Awad & Krishnan, 2006), and consumers have reported that the collection practices evoke feelings of being watched (Phelan et al. 2016). This tension is described as the personalization-privacy paradox, which highlights the conflicting consumer

behavior of desiring personalization whilst guarding personal data (Awad & Krishnan, 2006; Cloarec, Meyer-Waarden & Munzel, 2024).

Personalized advertising is defined as the creation of marketing messages and promotions to consumers based on their individual behaviors and interests (Bol et al., 2018). One new personalized advertising strategy is called synced advertising. With the use of advanced techniques, the strategy enables synchronizing advertisements on mobile devices with consumers' other media content in real time (Segijn, 2019). One example of this would be if a person watches a TV show about a holiday destination, and simultaneously gets an ad for flight tickets to that destination on their mobile device (Segijn & van Ooijen, 2022). Synced advertising can create personalized advertisements across multiple medias in real time, which is advantageous since nowadays consumers are increasingly using multiple media simultaneously (Nielsen, 2018). Due to the novelty of synced advertising, there is limited knowledge on how the strategy affect consumers and how consumers could defend themselves against these practices (Segijn et al. 2023). Several studies about personalized advertising report consumers to perceive it as creepy, intrusive, and that someone is watching what they are doing (More et al. 2015; Phelan et al. 2016; Segjin & van Ooijen, 2022). This has been conceptualized as perceived surveillance, which seems to be evoked when personalization becomes too specific to one's individual actions, and could results in unintended negative consequences (Farman, Leonora & Edwards, 2020). In the context of synced advertising, perceived surveillance seems to lead to negative attitudes and increased resistance towards the advertisement (Segijn & van Ooijen, 2020; Segijn et al. 2023). Despite initial studies on attention and recall, we know little about how synced ads trigger resistance via perceived surveillance.

Studies have shown that consumers' knowledge about personalized advertising and data collection techniques are low (McDonald & Cranor, 2010; Smit et al., 2014; Segijn & van Ooijen, 2022; Boerman & Segijn, 2022). From a consumer agency perspective, this is problematic since it is important for consumers to be informed and possess sufficient knowledge, to be able to resist persuasive tactics (Hudders et al., 2017). Knowledge about personalized advertising strategies could increase consumers persuasion knowledge (Segijn et al., 2023), which is knowledge about what advertising is and how it works (Friestad & Wright, 1994). Persuasion knowledge has shown to empower consumers to resist the persuasive attempt by rejecting or ignoring advertisements. Thus, consumers become less susceptible to advertising when gaining persuasion knowledge, which could alter the effectiveness of the advertisement (Friestad & Wright, 1994). Resistance towards advertisements has also been explained through reactance theory (Brehm & Brehm, 1981), that too personalized advertisements could be seen as a threat to one's freedom which creates message resistance or rejection (Silvia, 2006). Theory about persuasion knowledge and reactance theory suggest that awareness of advertising strategies could evoke responses of resistance among consumers. However, since synced advertising is a relatively new strategy, and consumer awareness of it appears low, it is important to investigate how this impact consumers and influences their responses, such as resistance.

An individual characteristic that seems to moderate consumers responses of personalized advertising is privacy concern. Even if personalization is valuable for consumers, some refuse to use it because of concerns about potential mishandling of data. Privacy concerns are the degree to which consumers are concerned about inappropriate behavior or non-consensual use of personal data shared on the Internet (Beak & Morimoto, 2012). This refers to how much individuals consider disclosing of personal information as a potential privacy loss (Dinev & Hart, 2006). Segijn, Voorveld and Vakeel (2021) suggest that privacy concern among consumers may lead to avoidance behavior in synced advertising, which could be because they are more aware of persuasive intents and tactics, which is in line with theory about persuasion knowledge (Friestad & Wright, 1994). Moreover, to further understand how individual characteristics impact consumer responses, several researchers propose future studies to include investigating the moderating effect of factors such as privacy concern (Segijn, Voorvel & Vakeel, 2021; Segijn et al., 2023).

Even if feelings of perceived surveillance among consumers have shown to increase resistance towards synced ads (Segijn et al. 2023), it may not always lead to the same responses for all consumers. According to the dataveillance framework (Strycharz and Segijn 2022), individual differences could affect consumers responses to perceived surveillance, such as individual dispositions towards privacy. As an explanation of why negative perceptions of privacy do not always result in protection behavior, Hoffman, Lutz and Ranzini (2016) proposed the individual characteristic of privacy cynicism to explain the contradiction in consumers behaviors. Privacy cynicism is an attitude of powerlessness, hopelessness, and mistrust towards handling of personal data which renders privacy protections as futile (Hoffmann, Lutz & Ranzini, 2016). It is a cognitive coping mechanism which allows people to overcome or ignore their concerns about privacy threats by resigning from privacy protection behavior completely, even though their concerns remain (Hoffmann, Lutz & Ranzini, 2016). Indeed, Segijn and van Ooijen (2020) found privacy cynicism to positively predict acceptance to personalization techniques used in synced advertising. According to the authors, the high scores on perceived surveillance and the role of privacy cynicism in the context of synced advertising, raises reasons for concern. It is thus important to further investigate this problem to contribute to the societal debate on ethics, consumer agency, and consumer empowerment in the context of synced advertising.

Given the rapid developments in personalized advertisement strategies and collection of consumer data, and the indications of worrisome consequences for consumers, it is crucial to further investigate how synced advertisement impact consumer responses, such as resistance. Additionally, in line with developments of privacy regulations, such as General Data Protection Regulation (GDPR), which aims at giving people more control over their data, it is important to study consumers' perceptions of this personalization strategy. Since synced advertising is a relatively new advertising practice, and research on the phenomena is scarce, there is a clear gap in the literature to explore further. The findings that have been made are recent and have not been properly confirmed. Most studies have been conducted in the U.S and only few studies represent other nationalities, which indicates an uncertainty whether the findings can be replicated in different cultures. Lastly, researchers studying the phenomenon of synced

advertising view their contributions as steppingstones for future research that could substantiate their claims (Segijn & Voorveld, 2021; Segijn, Voorveld & Vakeel, 2021; Boerman & Segijn, 2022; Segijn, Kim & van Ooijen, 2024).

The purpose of this study is to investigate the extent to which awareness of synced advertising influences consumer resistance. To address this task, the present study poses the following research questions:

RQ1: What is the relationship between awareness of synced advertising, perceived surveillance, and consumer resistance?

RQ2: How does privacy concern and privacy cynicism influence the relationship between awareness of synced advertising, perceived surveillance, and consumer resistance?

The structure of the paper is outlined as; the next chapter presents a theoretical framework introducing key concepts, hypothesis, and a proposed conceptual model. The following chapter presents the study's methodology, where the study's quantitative survey-based design is described. Thereafter, the result of the study is presented, followed by an analysis of consumers' responses of synced advertising. Lastly, the concluding chapter discusses the theoretical and practical implications of the study, as well as limitations and propositions for future studies.

2. Theoretical framework

2.1 Conceptualizing synced advertising

Synced advertising is a personalization strategy defined as “the practice of monitoring people’s current media behavior and using the collected information to show people individually targeted ads based on people’s current media behavior across media” (Segijn 2019, p.59). What is significant with this particular strategy, is that instead of using *previous* behavior to produce targeted ads, synced advertising is capable to offer personalized advertising simultaneously based on the consumers *current* media behavior (Segijn and Voorveld 2021). It can be exemplified by receiving an ad on a mobile device for flight tickets to a specific destination that is simultaneously discussed on a TV show the person is watching at the same time (Segijn & van Ooijen, 2022). Synced advertisement uses different techniques to personalize across media in real time, one of these is called watermarking which synchronizes ads on mobile devices with TV content. Watermarking is a sound signal imbedded in media content, for example a TV or radio show, which is recognized by mobile applications (Segijn & van Ooijen, 2020). This is a legal practice which consumers are informed about when downloading an app through the user agreements, for example when they give consent for the app to use the phone’s microphone (Segijn, 2019). The proposed opportunities of synced advertising are increased chance of exposure, possibility of repeated exposure, and synergy effects due to complimenting media characteristics (Segijn, 2019), all due to the increasing attention to ads over multiple

medias. This is an important advantage since media research shows that nowadays, most people multitask when using media (Nielsen, 2018). However, proposed barriers for effectiveness are related to surveillance, social presence, and creepiness (Segijn, 2019).

Similar to other personalized advertising strategies, synced advertising entails both benefits and costs for consumers (Segijn & van Ooijen, 2022), conceptualized in the personalization-privacy paradox and privacy trade-off (Awad & Krishnan, 2006). The main perceived costs mentioned by consumers are privacy concerns and privacy risk, and main benefits are personal relevance and added advertising value (Segijn & van Ooijen, 2022). Some initial studies about the effects of synced advertising have shown it could be effective in terms of increased attention (Segijn, Voorveld & Vakeel, 2021), product recall (Segijn et al., 2024), and brand attitude (Segijn & Voorveld, 2021). However, the effectiveness of the strategy seems to be obstructed by an evocation of negative affect among consumers (Segijn & van Ooijen, 2022), resulting in unacceptance, critical attitudes, and even resistance (Segijn & van Ooijen, 2020; Segijn et al. 2023).

2.2 Consumer awareness

Researchers have investigated consumers knowledge about synced advertising and found that awareness of the strategy and how it works is low (Segijn & van Ooijen, 2022; Boerman & Segijn, 2022). This suggests that persuasion knowledge is low, which refers to consumers capabilities to recognize, analyze, interpret, evaluate, and remember persuasion attempts and use of coping strategies which they believe to be effective in encounters with advertisements (Friestad & Wright, 1994). This could negatively affect consumer agency by not having all relevant information to make informed decisions (Friestad & Wright, 1994). A few studies have tested how consumer responses to synced advertising are affected by first being informed about the strategy, compared to not being informed. The results show that consumers who are informed before exposure of synced advertising perceive higher levels of surveillance, which in turn leads to increased resistance towards the synced ad (Segijn et al., 2023; Segijn, Kim & van Ooijen, 2024). These findings indicate that the level of awareness of synced advertising influences consumer responses.

2.3 Perceptions of surveillance

Although new personalization strategies aim to be more effective than mass communication by being more relevant to individuals, they are often criticized for invading people's privacy (Awad & Krishnan, 2006). Research regarding advertising strategies found that gathering personal data and tracking media behavior are considered as "creepy marketing" (Moore, et al. 2015). Consumers have reported that the data collection practices entailed in personalization evokes feelings of being watched (Phelan et al. 2016; Segijn & van Ooijen, 2020). These feelings are also enhanced when people slowly become more aware of data collection practices because of negative media messages, such as data breaches, which could contribute to the feelings of perceived surveillance (Byers, 2018). When using media, the negative feeling that someone is watching over your shoulder, is the same as a computer collecting your data (Phelan et al. 2016). Data-driven marketing, such as synced advertising, could be perceived as creepy when it entails using data in what could be considered as unexpected ways (Tene & Polonetsky,

2014). Indeed, a study of perceived risks of the two strategies of synced advertising and online behavioral advertising, found them to be associated with feelings of intrusiveness and creepiness (Segijn & van Ooijen, 2022). Feelings of creepiness was higher for synced advertising, which was discussed might be caused by the real-time characteristic of the strategy inducing the perception of being watched.

2.4 Resistance towards advertisement

Studies have found the negative emotions associated with synced advertising to impact consumer responses. If an advertisement seems too specific to one's individual actions, it might cause unintended negative consequences, for example the ad could act as a cue to awareness of that data is collected from them (Farman, Leonora & Edwards, 2020). These negative reactions to advertising tactics have been explained through reactance theory (Brehm & Brehm, 1981), which suggests that persuasive appeals that are perceived as threats to one's freedom can arouse message resistance or rejection. Resistance have been defined as "a motivational state, in which consumers have the goal to reduce attitudinal or behavioral change or to retain one's current attitude" (Fransen et al., 2015 p.7). Consumers can use different strategies to resist advertising, such as avoidance, contesting, and empowerment (Fransen et al. 2015). In this study, resistance towards synced advertising is operationalized through contesting, by actively refuting the ad by challenging the message and the persuasive tactic used (Fransen et al. 2015; Segijn et al. 2023).

Thus, previous studies have found perceptions of surveillance to be linked with synced advertising (Segijn & van Ooijen, 2020; Segijn et al. 2023; Segijn et al. 2024; Segijn, Kim & van Ooijen, 2024). In turn, perceived surveillance has shown to lead to negative attitudes and resistance toward the ad (Segijn & van Ooijen, 2020; Segijn et al. 2023), and could also affect how consumers use media, such as using it less, or in a different way (McDonald & Cranor, 2010; Buchi et al. 2020). Additionally, studies investigating the level of awareness of synced advertising have found it to influence both perceptions of surveillance, and resistance towards the advertisement (Segijn et al., 2023; Segijn, Kim & van Ooijen, 2024).

Based on these findings, this study proposes that when consumers are aware of the persuasion tactic, they will perceive higher levels of surveillance, and also response with higher resistance towards the advertisement. Additionally, this study proposes that consumers' perceptions of surveillance connected to synced advertising, will lead to resistance towards the ad.

H1: Consumer awareness of synced advertising has a positive direct effect on resistance towards synced advertisement.

H2: Consumer awareness of synced advertising has a positive impact on perceived surveillance.

H3: Perceived surveillance has a positive impact on resistance towards synced advertisement.

2.5 Privacy concern

The individual characteristic of privacy concern is defined by Baek and Morimoto (2012, p. 63) as "the degree to which a consumer is worried about the potential invasion of the right to prevent the disclosure of personal information to others." That personalized advertising increases consumers' privacy concerns have been well documented in the literature (McDonald & Cranor, 2010; Smit, van Noort & Voorveld, 2014; Daems, De Pelsmacker & Moons, 2019). In the personalization-privacy paradox, the risk of privacy loss is considered the main cost for consumers. For individuals with higher levels of privacy concern, the risk of privacy loss is considered a greater cost than for individuals with lower concerns. It is suggested that privacy concern among consumers could lead to avoidance behavior due to them being more aware of persuasive intents and that data is collected from them (Segijn, Voorveld & Vakeel, 2021), which is in line with theory about persuasion knowledge (Friestad & Wright, 1994). Research on personalized advertising have indeed found privacy concerns to have a moderating role in consumer responses. For example, studies have found adolescents with higher levels of privacy concerns to be more skeptical towards personalized ads (Zarouali et al. 2017), and a positive relationship was found between privacy concerns and ad skepticism (Baek & Morimoto, 2012). Additionally, initial studies on synced advertising propose future studies to include investigating the moderating effect of privacy concern on consumer responses (Segijn, Voorvel & Vakeel, 2021; Segijn et al., 2023). Due to these previous findings and propositions, this study argues that consumers with higher levels of privacy concerns will perceive higher levels of surveillance when exposed to synced advertisements.

H4: Privacy concerns will act as a moderator in the relationship between awareness of synced advertising and perceived surveillance so that the influence of awareness on surveillance will increase for people with high levels of privacy concerns.

2.6 Privacy cynicism

Consumers' decision on whether to share data have been conceptualized as a trade-off between perceived benefits and costs, assuming consumers to make rational decisions. However, this does not explain the contradiction in consumer behavior portrayed in the personalization-privacy paradox, that people have privacy concerns whilst at the same time lacking in protection behaviors (Hoffman, Lutz & Ranzini, 2016). Hoffman, Lutz and Ranzini (2016) proposes the concept of privacy cynicism to provide an explanation to the privacy paradox. Originating from studies about cynicism in other contexts, privacy cynicism is argued to aid the understanding of why individuals avoid privacy protection behaviors despite significant privacy concerns. It is defined as an "attitude of uncertainty, powerlessness and mistrust towards the handling of personal data by online services, rendering privacy protection behavior subjectively futile." (Hoffman, Lutz & Ranzini, 2016 p.2). Cynicism is associated concerns about other's motives, and with feelings of uncertainty, powerlessness, and mistrust. Similar to other contexts, cynicism is proposed to function as a coping mechanism to privacy threats. It would allow fearful, non-skilled Internet users to use the appreciated services of personalization without the feeling of dissonance, because protection behaviors could be rationalized as useless (Hoffman, Lutz & Ranzini, 2016).

Indeed, one study found more privacy cynicism to lead to more acceptance towards the data collection techniques used in synced advertising (Segijn & van Ooijen, 2020). The researchers stated that “people experience feelings of being watched but at the same time they give up because they experience lack of agency” (Segijn & van Ooijen, 2020 p.336). However, research about the effect of privacy cynicism in this context is still limited. In connection to perceived surveillance, the dataveillance framework (Strycharz and Segijn, 2022) proposes that consumers’ responses to perceived surveillance depend on individual differences, such as privacy cynicism. One study which investigated the effect of perceived surveillance on brand attitude, found a moderating effect of privacy cynicism (Segijn, Kim & van Ooijen, 2024). For participants with low levels of cynicism, the relationship between perceived surveillance and brand attitude was negative. However, the same relationship was positive for participants with intermediate to high levels of privacy cynicism. The researchers interpreted this finding as when experiencing surveillance, it leads to less positive attitudes for people with low levels of privacy cynicism. But for people with intermediate to high levels of privacy cynicism, they appear to not alter the negative perception of perceived surveillance into their attitudes toward the brand. The researchers suggest that people with high levels of privacy cynicism are more susceptible to persuasive attempts. However, the authors state that their study could be seen as a stepping-stone in this novel area of research, and that further studies is needed to validate their claims. Thus, this study proposes a similar effect of privacy cynicism as a moderator between perceived surveillance and resistance.

H5: Privacy cynicism will act as a moderator in the relationship between perceived surveillance and resistance towards synced advertising so that the influence of perceived surveillance on resistance will decrease for people with high privacy cynicism.

Given the proposed hypothesis, a conceptual model is proposed.

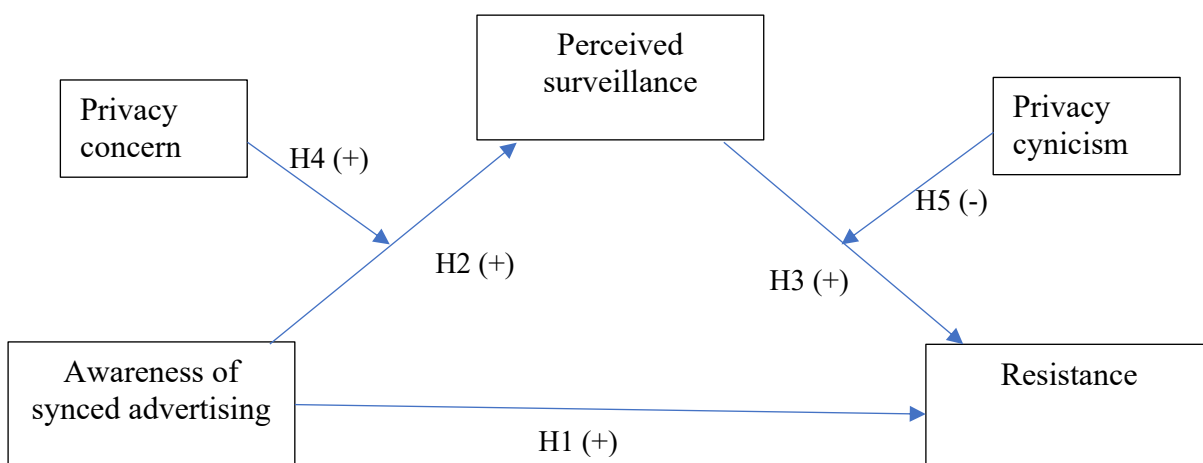


Figure 1. Conceptual model.

3. Methodology

3.1 Research Approach

The research philosophy of this study is based in empiricism, a perspective which considers reality to be constructed by what is observable (Bell et al., 2022). The research approach of this study is based on a quantitative deductive approach, which means that hypotheses are formulated based on existing theory and are then empirically investigated through observations (Patel & Davidsson, 2019). The deductive process used follows the following steps: it begins in existing theory through a literature review, on which hypotheses then are formulated upon, data is collected, results are analyzed, hypothesis are conformed or rejected, and finally theory is revised (Bell et al., 2022). To answer this study's research question and test the hypotheses, a quantitative method is adopted, and data is collected by designing and distributing a survey. The analysis of the collected data is based on the theoretical framework, and a statistical analysis of the result is performed in the program IBM SPSS Statistics version 30. The chosen research approach allows general conclusions of the relationships between the variables examined in this study.

3.2 Participants and procedure

The aim of this study is to examine consumers' awareness, perceptions, and responses to synced advertising, and the relationship between these variables. To be able to examine these relationships, data was collected through an online survey. The survey was constructed in Qualtrics and was distributed in two ways to attain the highest possible response rate, to students at the University of Gothenburg, and online during two weeks in April, 2025. The sampling strategy used was a non-probability convenience sampling. Since the intended target group of the study was ordinary people who come across personalized advertisements when using their mobile phones, online distribution was considered suitable. Additionally, to attain a higher response rate within the limited time available, students at the University of Gothenburg was approached and asked to participate. The multiple distribution methods enabled access to a mixture of participants regarding age, education, and previous knowledge of technology and advertising. However, the online distribution also entailed limited control over who participated and the response rate, which will be discussed further in section 3.5. For the online distribution, an anonymous link was posted in various groups on Facebook, such as local community groups. Informed consent was required from all participants to progress to the survey. The survey was available in both English and Swedish, the translation to Swedish was aided by AI and controlled by a group of native Swedish speakers. Participation in the survey was completely anonymous and voluntary. A total of 166 answers was collected, however 26.5 % (44 participants) did not complete the whole survey and was therefore filtered out before the analysis. The final number of participants included in the analysis of the study was 122.

In the survey, respondents were first asked to read a scenario about encountering synced advertising, replicated by Boerman and Segijn (2022), who used a similar approach to investigate consumer responses to synced advertising. The scenario in the survey was as follows:

“Imagine that you are watching a TV show on traveling. The TV program shows a report on Italy. At the same time, you also use your phone to read the news. In the news app you see an

advertisement for a TUI flight to Italy. This ad is shown to you because an advertising company has specifically linked it to you based on what is being said in the television show. If you had watched a different television program, or if you had not watched television, another ad would have appeared in the app.”

The scenario was followed by questions about the participants’ awareness of synced advertising as a persuasive tactic, perceived resistance towards the ad, and perceived surveillance. The survey continued with questions about the personal characteristics of privacy cynicism and privacy concerns. The last questions in the survey were demographic variables which has shown to predict knowledge and awareness about personalization strategies in previous research, such as education, age, and gender (Smit et al., 2014; Segijn & van Ooijen, 2022). At the end of the survey, participants were thanked for their participation.

3.3 Measures

The scenario portrayed in the survey was replicated by Boerman and Segijn (2022). All the following measures was answered on a 7-point Likert scale, 1 = totally disagree, 7 = totally agree, which results in the value 4 to represent a neutral opinion.

Awareness of synced advertising as a persuasive tactic was based upon three items from Ham (2017), and Boerman, Kruikemeier, and Zuiderveen Borgesius (2021). The participants were asked to what extent they agree with the statements of ‘In real life, I believe that companies ...’ followed by ‘collect information about my TV viewing habits’, ‘use information about my TV viewing habits to show me advertisements’, and ‘share information about my TV viewing habits with other companies’. The three items were averaged into one measure of synced advertising awareness.

Resistance was measured by three items based on Silvia (2006), The participants were asked whether they contested the ad in the scenario through the statements; ‘I criticized the ad’, ‘I thought up points that went against the ad’, and ‘I was skeptical of the ad’. The three items were averaged to create a single measure of resistance towards the ad.

To measure *perceived surveillance*, the participants were asked to which extent they agreed with four statements. They began with ‘When I imagined seeing the banner ad while watching TV, I had the feeling that advertisers were ...’ followed by ‘looking over my shoulder’, ‘entering my private space’, ‘watching my every move’, and ‘checking up on me’ (Segijn, Opre, & van Ooijen, 2021). The four items were averaged into one single scale of perceived surveillance.

The measure of *privacy cynicism* was based on Choi, Park, and Jung (2018). It consisted of three statements: ‘I often doubt the significance of online privacy issues’, ‘I have become less interested in online privacy issues’, and ‘I have become less enthusiastic in protecting information provided to online vendors’. The participants were asked to which degree they agreed with the statements, and the three items were afterward averaged into one single measure of privacy cynicism.

Privacy concerns were measured by five items based on Kruikemeier, Boerman and Bol (2020). Participants were asked to indicate whether they agree with statements starting with ‘When I am online, I am worried that ...’, followed by ‘My personal data (such as browsing behavior, name or location) is being misused’, ‘Others keep track of what I do’, ‘My data are not stored safely’, ‘My data are distributed to, for example, companies’, and ‘My personal data can be accessed by people I do not know’. The five items were averaged into one measure of privacy concerns.

3.4 Analysis of data

When data had been collected through the online survey, the data was transferred into the program IBM SPSS Statistics version 30 to be processed. Before analysis of the data was possible, the dataset was examined in order to identify potential issues which could have an impact on the result of analysis (Van den Broeck et al., 2005). Participants who had not completed the survey was filtered to not be included in the final analysis, in accordance with Hair et al. (2014). Thereafter, the items of each scale were constructed into one averaged measure, resulting in five averaged measures to be used in the analysis: awareness, resistance, perceived surveillance, privacy concern, and privacy cynicism. The internal reliability of each measure was examined by Cronbach’s alpha, see the results in Table 2.

To analyze the conceptual model proposed in this study, a PROCESS macro Model 21 (Hayes, 2014) was used. This allowed for complex conditional processes by simultaneous testing of both mediation and moderated mediation effects in a single analytical framework (Hayes, 2014). For this specific study, the model enables examination of indirect effects of awareness of synced advertising on resistance through perceived surveillance, depending on the moderating variables privacy concern and privacy cynicism. In this particular analysis, bootstrapping with 5000 samples was applied. This ensured more robust and reliable confidence intervals for indirect and moderating effects, and is advantageous when normal distribution assumptions are uncertain. Also applied in the analysis was HC4 heteroscedasticity-consistent standard errors to account for potential non-constant variance in the residuals. Additionally, a Johnson-Neyman analysis was conducted, which identifies the specific values of the moderator at which the indirect effect becomes statistically significant (Hayes, 2014).

3.5 Research quality

The quality of the research could be examined through the study’s internal and external validity. The internal validity refers to which degree a study actually measures what it is intended to measure (Patel & Davidson, 2019). This study ensured internal validity by the use of established validated scales from prior research which were chosen to fit the purpose of this study. The reliability of each scale was tested after the data collection, to ensure the internal consistency within each measure. Moreover, to strengthen the interpretation of the analysis, the use of the PROCESS model for analysis enabled estimations of effects within the theoretical grounded framework.

The next step to assess is the external validity, which refers to the possibility to make generalizations of the findings beyond the specific conditions of the study (Patel & Davidson, 2019). The collection of data for this study was made through an online survey distributed on social media and to students at the University of Gothenburg, with a non-probability convenience sampling, which may limit the generalizability of the results. As seen in the result section, the sample consisted of uneven proportions of gender, age, and education, which imposes limitations to the ability to generalize. Additionally, the sample (N = 122) was rather small, which may lead to a reduced representativeness of the target group. Thus, the results of this study could provide insights to the relationships investigated, but the findings generalizability to other populations or contexts is limited.

3.6 Ethical considerations

There are several ethical aspects to consider as a researcher, such as consent, anonymity, integrity, and fraud (Bryman & Bell, 2011). This was taken into consideration when informing respondents before participation in this study. Before entering the survey, all respondents were informed about the purpose of the study, that their involvement was completely voluntary and anonymous, and that they could exit the survey at any time without consequence. Informed consent was obtained through a compulsory box to be ticked before enabling to start the survey. All data were collected anonymously, and no personal information was gathered which could identify individuals. The responses were confidential and used only for the purpose of this academic research. The collection and handling of the data was in compliance with data protection guidelines and ethical principles issued by Gothenburg University. The study involved minimal risk and caused no physical or psychological harm to the participants.

4. Results & Analysis

In this chapter the result of the study is presented. First, descriptive statistics about the sample and scales are presented. Following is the results of the main regression analysis with a PROCESS macro model 21. The regression analysis aims at answering the research questions by investigating the relationship between awareness of synced advertising and resistance, with perceived surveillance as mediator, and privacy concern and privacy cynicism as moderators.

4.1 Descriptive statistics

The demographic characteristics of the final sample consisting of 122 participants is presented in Table 1. As seen in the table, the sample consisted of a high proportion (64.8 %) of females. Regarding the age distribution, the largest age group represented in the sample was age 25 to 34, which could be explained by the survey partly being distributed to students at the University of Gothenburg. Lastly, the sample consists of a large proportion of participants with higher levels of education. The possible implications of this distribution of the sample will be discussed further under limitations in section 5.3.

Table 1. Demographic characteristics of the sample

Measure	Item	Count	Percentage (%)
Gender	Male	43	35.2
	Female	79	64.8
Age	18-24	30	18.1
	25-34	39	23.5
	35-44	13	7.8
	45-54	11	6.6
	55-64	18	10.8
	65+	11	6.6
Education	Primary school	5	4.1
	Upper secondary education	11	9.0
	University education but no degree	14	11.5
	Bachelor's degree	50	41.0
	Master's degree	42	34.4

Descriptive statistics of the scales measuring the variables in the proposed conceptual model are outlined in Table 2. When looking at the mean values of the variables, it is noteworthy that awareness of synced advertising is only slightly above the neutral value ($M = 4.973$), indicating that the respondents does not have complete knowledge about the advertising strategy. To assess the internal reliability of the scales, Cronbach's alpha coefficients was measured. The coefficients of the scales were overall exhibiting values above 0.7, which is considered the acceptable limit. This entails trustworthiness and internal consistency to the measurements used in this study. However, the exception to the approved reliability values was seen for the variable privacy cynicism, which only had a coefficient of 0.545. The measure of privacy cynicism could obtain a Cronbach's alpha coefficient of 0.686 if one item was deleted, however this would result in the measure only consisting of two items. The main analysis of the study was run with both the original three items included for the variable privacy cynicism, and also an alternative analysis was conducted with one item removed. Since no difference regarding significant relationships was found in the two alternatives, the decision to retain the scale despite the lower value was made. A Cronbach's alpha value between 0.5-0.6 could still be considered acceptable, but implies lower reliability than desirable (Pallant, 2016). The implications of the low internal reliability of the measure will be discussed under limitation in section 5.3.

Table 2. Descriptive statistics of scales used

Scale	Mean	Standard Deviation	Cronbach's alpha
Awareness of synced advertising (3 items)	4.973	1.510	0.803
Resistance to ad (3 items)	4.189	1.342	0.812
Perceived surveillance (4 items)	4.322	1.679	0.914
Privacy concern (5 items)	4.839	1.436	0.897

Privacy cynicism (3 items)	3.721	1.178	0.545
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4.2 Main analysis PROCESS Model 21

The proposed conceptual model was analyzed using PROCESS macro Model 21 (Hayes, 2014) with 5000 bootstrap samples and HC4 heteroscedasticity-consistent standard errors. The analysis consisted of *awareness of synced advertising* as independent variable (X), *resistance to synced ads* as dependent variable (Y), *perceived surveillance* as mediator (M), *privacy concern* as moderator for the relationship between X and M (W), and *privacy cynicism* as moderator for the relationship between M and Y (Z). The results of the analysis are visible in Table 3.

Table 3. Results of PROCESS Model 21

Effect	b	SE (HC4)	t	p
Direct effect awareness → resistance	-0.086	0.111	-0.771	0.442
awareness → surveillance	0.280	0.089	3.143	0.002
surveillance → resistance	0.312	0.080	3.881	0.000
Moderation privacy concern	0.133	0.062	2.144	0.034
Moderation privacy cynicism	-0.001	0.089	-0.010	0.992

The analysis of the direct effect of awareness on resistance was not statistically significant, ($b = -0,086$, $p = 0.442$). As a result, there was no support for Hypothesis 1, which predicted a positive direct effect. The result for the mediating path, showed that awareness positively and significantly predicted perceived surveillance ($b = 0.280$, $p = 0.002$), providing support for Hypothesis 2. For the other side of the mediating path, the analysis also showed a significant positive effect of perceived surveillance on resistance ($b = 0.312$, $p = 0.000$), supporting Hypothesis 3.

A significant interaction was found between awareness and the moderator privacy concern when predicting perceived surveillance ($b = 0.133$, $p = 0.034$). This indicates that privacy concern moderates the relationship between awareness and perceived surveillance, giving support for Hypothesis 4. A Johnson-Neyman analysis, which identifies the specific values of a moderator at which the effect of an independent variable becomes statistically significant, showed that the relationship between awareness and perceived surveillance was statistically significant only at medium and high levels of privacy concern, indicating that the relationship is stronger for individuals with higher levels of privacy concern (see Table 4).

No significant interaction was found between perceived surveillance and the moderator privacy cynicism in predicting resistance ($b = -0.001$, $p = 0.992$). Since the measure of privacy cynicism attained a lower Cronbach's alpha value (0.545), another attempt at the model was tested with a modified measure of privacy cynicism consisting of only two items, resulting in a Cronbach's alpha value of 0.686. However, the results of this attempt were still not significant, no moderating effect was found for privacy cynicism. Thus, Hypothesis 5 was not supported.

Table 4. Conditional effects of awareness on perceived surveillance at values of the moderator privacy concern.

Privacy concern	b	SE (HC4)	t	p
-1.436 (- 1 SD)	0.089	0.129	0.692	0.490
0 (0 SD)	0.280	0.089	3.143	0.002
1.436 (+ 1 SD)	0.471	0.123	3.817	0.000

4.3 Indirect effects and moderated mediation

The analysis further revealed that the index of the moderated mediated mediation was not significant (index = 0.000, 95% CI [-0.020, 0.020]). Although, a significant indirect effect of awareness on resistance through perceived surveillance was found at conditional levels of privacy concern, see Table 5. At high levels of privacy concern, the indirect effect was significant and stronger than low and medium levels (b = 0.147, 95 % CI [0.028, 0.301]). Indices of conditional moderated mediation confirmed that privacy concern significantly moderated the indirect effect at all levels of privacy cynicism. This suggests a moderated mediation, where the indirect effect of awareness on resistance is moderated by privacy concern, and that privacy cynicism does not significantly change the moderation, as seen in Table 5.

Table 5. Conditional indirect effects of awareness on resistance through perceived surveillance.

Privacy concern	Privacy cynicism	Indirect effect	Boot.SE	95 % CI	Significant
-1.436 (-1 SD)	-1.178 (-1 SD)	0.028	0.034	[-0.054, 0.089]	No
-1.436 (-1 SD)	0	0.028	0.032	[-0.050, 0.082]	No
-1.436 (-1 SD)	1.178 (+1 SD)	0.028	0.134	[-0.048, 0.094]	No
0	-1.178 (-1 SD)	0.088	0.039	[0.021, 0.173]	Yes
0	0	0.087	0.034	[0.028, 0.159]	Yes
0	1.178 (+1 SD)	0.087	0.043	[0.013, 0.183]	Yes
1.436 (+1 SD)	-1.178 (-1 SD)	0.147	0.064	[0.039, 0.287]	Yes
1.436 (+1 SD)	0	0.147	0.054	[0.056, 0.265]	Yes
1.436 (+1 SD)	1.178 (+1 SD)	0.147	0.070	[0.028, 0.301]	Yes

4.4 Summary of results

This study aimed to investigate how awareness of synced advertising leads to resistance through perceived surveillance, and how privacy concern and privacy cynicism moderates this effect. Through analysis of these relationships, the study could not find a significant direct effect of awareness on resistance, resulting in rejection of Hypothesis 1. The results revealed a positive significant influence of awareness on perceived surveillance, thus confirming Hypothesis 2. A positive effect of perceived surveillance on resistance confirms Hypothesis 3. Privacy concern was found to have a significant moderating effect on the relationship between awareness and perceived surveillance, giving support for Hypothesis 4. Lastly, no moderating effect was found of privacy cynicism on the relationship between perceived surveillance and

resistance, leading to the rejection of Hypothesis 5. A summary of support for the proposed hypotheses is presented in Table 6.

Table 6. Summary of support for hypotheses.

Hypotheses	Supported/ Unsupported	Level of significance (Sig.)
H1: Consumer awareness of synced advertising has a positive direct effect on resistance towards synced advertisement.	Unsupported	p = 0.442
H2: Consumer awareness of synced advertising has a positive impact on perceived surveillance.	Supported	p = 0.002
H3: Perceived surveillance has a positive impact on resistance towards synced advertisement.	Supported	p = 0.000
H4: Privacy concern will act as a moderator in the relationship between awareness and perceived surveillance so that the influence of awareness on surveillance will increase for people with high levels of privacy concerns.	Supported	p = 0.034
H5: Privacy cynicism will act as a moderator in the relationship between perceived surveillance and resistance so that the influence of perceived surveillance on resistance will decrease for people with high privacy cynicism.	Unsupported	p = 0.992

5. Discussion & Conclusion

The purpose of this study was to investigate the relationship between awareness of synced advertising, perceived surveillance and consumer resistance, and how privacy concern and privacy cynicism influence these relationships. The results of the study showed that awareness of synced advertising had a positive significant effect on perceived surveillance, and that this effect was significantly moderated by privacy concern. In turn, perceived surveillance had a significant positive effect on resistance, however this relationship was not significantly moderated by privacy concern. The direct effect of awareness on resistance was not significant, indicating that the relationship between these two variables primarily goes through the indirect path.

5.1 Theoretical implications

This study was based on the growing theoretical framework about the consumer effects of synced advertising. The results shows that awareness of synced advertising is not completely fulfilled, which is in line with previous studies about consumer knowledge of synced advertising (Segijn & van Ooijen, 2022; Boerman & Segijn, 2022). This could mean that the respondents' persuasion knowledge is insufficient, which may limit their capabilities to interpret and evaluate persuasion attempts. Theory about persuasion knowledge suggest that increased awareness of advertising strategies could evoke responses of resistance (Friestad & Wright, 1994). This study however could not find a significant relationship between awareness of synced advertising and resistance, which goes against theories about persuasion knowledge. The lack of support for a direct effect may suggest that resistance is not triggered directly by awareness. Although, the analysis showed a significant indirect effect of awareness on resistance through perceived surveillance, indicating that resistance rather acts as a response to the threatening perceptions of surveillance associated with synced advertising. Thus, based on the findings of this study, increased consumer awareness of synced advertising does not directly lead to increased consumer awareness. Instead, resistance is mediated through the negative perceptions of surveillance evoked by synced advertising.

This study found evidence of a positive relationship between awareness of synced advertising and perceived surveillance, which confirms previous findings that consumers who are aware and informed about the advertising strategy perceive higher levels of surveillance (Segijn et al., 2023; Segijn, Kim & van Ooijen, 2024). The findings indicate that synced advertising arouses negative emotions in the respondent resulting in perceptions of surveillance, which supports the growing theoretical framework about surveillance and dataveillance (Strycharz and Segijn, 2022). This supporting evidence means that perceived surveillance is an actual threat to the effectiveness of synced advertising.

The finding of a positive relationship between perceived surveillance and resistance is in line with how reactance theory (Brehm & Brehm, 1981) explains how negative reactions to advertising tactics can lead to resistance. The result of this study supports the theory's suggestion that persuasive appeals that are perceived as threatening can arouse message resistance or rejection. The relationship found between perceived surveillance and resistance in this study is a replication of the findings in similar research made by Segijn et al. (2023).

The significant moderating effect of privacy concern on the relationship between awareness and perceived surveillance is in line with previous studies that also have found higher levels of privacy concern to lead to more negative outcomes such as skepticism towards ads (Zarouali et al. 2017). This moderated mediation indicates that individual differences in privacy concern affects how consumers process advertising cues, which aligns with the personalization-privacy paradox and consumers perceived costs (Culnan & Armstrong, 1999). Moreover, the analysis indicate that privacy concern plays an important role in the indirect effect of awareness on resistance, so that the indirect effect is stronger with higher levels of privacy concerns. This could be explained by individual differences seen in the trade-off of disclosing personal data, that individuals with high privacy concern consider sharing personal data as a greater risk of privacy loss than others (Dinev & Hart, 2006). Additionally, this study supports previous

research which suggests the explanation that consumers with higher privacy concern might be more aware of the persuasive tactics, and that this could lead to more avoidance behavior (Segijn, Voorveld & Vakeel, 2021).

The results could not confirm privacy cynicism as a moderator between perceived surveillance and resistance, which goes against the theoretical framework of dataveillance (Strycharz and Segijn, 2022) that proposes consumer responses to perceived surveillance to depend on privacy cynicism as an individual characteristic. Previous studies have found privacy cynicism to moderate the relationship between perceived surveillance and consumer responses (Segijn, Kim & van Ooijen, 2024), although this study could not support these previous findings. A potential reason for the lack of evidence in this study could be due to the low internal reliability of the measure (see section 5.3 on limitations). However, the lack of significance of privacy cynicism in this study could additionally be due to cultural and demographic differences. This study's sample mainly consists of young adults, Swedish, high educated people, who perhaps do not experience cynicism in a similar manner to samples used in previous research. Privacy cynicism is explained as a coping mechanism which could allow non-skilled Internet users to rationalize protection behaviors as useless (Hoffman, Lutz & Ranzini, 2016). Thus, perhaps privacy cynicism is a concept more tangible in individuals not represented in the sample of this study. This study did not measure its participants level of Internet knowledge, but given the young age and high educational levels represented in the sample, the sample could be assumed to hold medium to high levels of Internet knowledge. Therefore, the lack of evidence of privacy cynicism in this study could be due to the characteristic not being represented in the sample due to cultural and demographic differences.

Thus, this study contributes to the growing body of literature on synced advertising as a new advertising strategy. The findings of the moderated indirect effect of awareness on resistance demonstrates that the effect of advertising awareness is clearly dependent on consumer's individual levels of privacy concern. In the light of these findings, the need for more nuanced moderated mediation models in privacy research is reinforced. Additionally, the use of the PROCESS Model 21 (Hayes, 2014) allowed for testing a complex moderated mediation model which revealed that privacy concern seems to play a strong moderating role in the model.

5.2 Practical Recommendations

The findings of this study offer several practical implications for advertisers, marketers, and policymakers working with synced advertising. As shown, consumer awareness of synced advertising can lead to increased perceptions of surveillance, especially among those with high privacy concerns, which in turn drives resistance. These insights call for more thoughtful and consumer-sensitive advertising strategies.

First, transparency should go beyond surface-level disclosures and instead offer clear, accessible explanations of how synced advertising works. Importantly, this transparency must be coupled with real user control, such as opt-in mechanisms and adjustable privacy settings, to avoid reinforcing perceptions of surveillance. Without giving users meaningful agency, even well-intentioned transparency can backfire. Second, marketers should consider individual

privacy guidelines when designing personalized content. Rather than applying standardized targeting strategies, segmenting consumers based on their level of privacy concern can help avoid resistance among the more sensitive consumers. For example, less intensive data collection approaches or contextual targeting may be more appropriate for these groups.

Marketers must also be careful not to cross the line to become creepy, where personalization becomes so precise or intrusive that it causes discomfort or a sense of being watched. Balancing relevance with respect for privacy is key to maintaining consumer trust and avoiding emotional backlash, as is discussed in the personalization-privacy paradox (Awad & Krishnan, 2006). Finally, policy makers and regulatory bodies should take the study's findings into account when shaping future guidelines on targeted advertising. Rather than focusing solely on technical compliance, regulations should consider the psychological and emotional consequences of advertising practices. Thus, policy frameworks need to address how these strategies make people feel, particularly in terms of autonomy, trust, and psychological comfort.

5.3 Study limitations and future research

There are some important limitations of this study to recognize. First of all, the sample of the study is rather small ($N = 122$), which may influence the findings of the study. Additionally, the distribution method resulted in a non-representative sample which creates limitations to the generalizability of the results to other populations and contexts. The sample consisted of a large proportion of women, individuals with a high level of education, and mostly younger participants. The sample included in this study is therefore not representative for the broader population or the full spectrum of online consumers. A suggestion for future research is to repeat the study on a larger, more diverse, and representative sample, especially to assess whether the moderated mediation effects found here holds across different demographic groups.

When considering the structure of the survey, the self-reporting nature of the questions introduces a risk of social desirability bias or misinterpretation. However, since the purpose of the study was to investigate consumers' perceptions, the self-reporting design was considered appropriate despite its limitations.

Another important limitation to consider in the study is the relatively low internal reliability of the measure of privacy cynicism (Cronbach's $\alpha = 0.545$), which consisted of three items. This affects the reliability of the specific construct and, in turn, the validity of its role in the model. Despite the use of an established scale, a potential reason for the low reliability could be due to issues in the translation of the items into Swedish. Since the study was conducted in Sweden, the survey was available in both English and Swedish. While translations were performed with the aid of AI and later reviewed by Swedish speakers, subtle semantic shifts may have affected comprehension and consistency. Additionally, the low internal consistency may have weakened the observed associations involving privacy cynicism, potentially concealing effects that a more reliable measure could have uncovered. When testing a reduced version of the scale with two items, Cronbach's α increased to 0.686, but privacy cynicism

still did not show significant effects in the model. This raises the possibility that the construct of privacy cynicism may be culturally dependent. The sample, composed mainly of young, educated Swedish consumers, may not express or relate to privacy cynicism in the same way as participants in previous research. Future studies should further investigate the construct of privacy cynicism in other cultural and demographic contexts to determine whether it has universal applicability or is more context specific.

In addition to these directions, future research could explore other psychological or emotional variables that may influence resistance to synced advertising, such as perceived manipulation, trust in media platforms, or digital literacy levels. Experimental studies that manipulate transparency levels or offer different forms of user control could also help determine how to mitigate the negative effects of perceived surveillance. Longitudinal research could further uncover how exposure to synced advertising influences consumer resistance over time, particularly as users' awareness and privacy attitudes evolve. Finally, qualitative studies could complement the quantitative findings by offering deeper insights into how consumers experience and interpret synced advertising in everyday contexts.

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