

When Adverts Know Everything: A Case Study of Online Ad Tracking in a College Student

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Abstrak

Di era digital saat ini, kehadiran iklan daring yang dipersonalisasi telah memicu kekhawatiran yang meluas mengenai privasi dan keamanan data. Artikel ini menyajikan studi kasus yang melibatkan seorang mahasiswa yang menyadari bahwa iklan di ponsel cerdasnya seolah mencerminkan topik yang baru saja mereka bahas dalam percakapan pribadi. Untuk mengeksplorasi fenomena ini, saya melakukan penelitian kualitatif menggunakan wawancara dengan beberapa individu yang memiliki pengalaman serupa. Tujuannya adalah untuk memahami persepsi, perasaan, dan pengetahuan mereka tentang cara kerja pelacakan iklan daring. Temuan ini mengungkapkan bahwa meskipun banyak peserta menduga bahwa ponsel cerdas mereka "mendengarkan" percakapan mereka, penelitian terkini dan pendapat para ahli menunjukkan bahwa iklan bertarget terutama didorong oleh algoritma yang menganalisis data perilaku, riwayat pencarian, pola penelusuran, penggunaan aplikasi, dan bahkan pelacakan lokasi. Studi ini tidak hanya mengungkap bagaimana iklan semacam itu ditayangkan, tetapi juga menyoroti ketidaknyamanan psikologis dan perasaan diawasi yang dialami oleh pengguna. Kekhawatiran etis terkait pengumpulan data, persetujuan, dan manipulasi perilaku konsumen melalui iklan bertarget juga dibahas. Hasil penelitian ini menekankan kebutuhan mendesak akan literasi digital dan transparansi dari perusahaan teknologi, yang memungkinkan individu untuk membuat pilihan yang tepat tentang privasi mereka. Dengan memahami mekanisme nyata di balik pelacakan iklan, orang dapat mengambil langkah praktis untuk melindungi informasi pribadi mereka dalam lingkungan digital yang semakin terhubung.

Kata kunci : Mahasiswa, Pelacakan Iklan Online

Abstract

In this digital age, the presence of personalized online advertisements has sparked widespread concern over privacy and data security. This article presents a case study involving a college student who noticed that advertisements on their smartphone seemed to reflect topics they had recently discussed in personal conversations. To explore this phenomenon, I conducted qualitative research using interviews with several individuals who shared similar experiences. The aim was to understand their perceptions, feelings, and knowledge about how online ad tracking works. The findings reveal that while many participants suspect that their smartphones are "listening" to their conversations, current research and expert opinions suggest that targeted advertisements are primarily driven by algorithms analyzing behavioral data, search history, browsing patterns, app usage, and even location tracking. This study not only uncovers how such ads are delivered but also highlights the psychological discomfort and feelings of surveillance experienced by users. Ethical concerns regarding data collection, consent, and the manipulation of consumer behavior through targeted advertising are also addressed. The results emphasize the urgent need for digital literacy and transparency from technology companies, allowing individuals to make informed choices about their privacy. By

understanding the real mechanisms behind ad tracking, people can take practical steps to protect their personal information in an increasingly connected digital environment.

Keywords : *College Student, Online Ad Tracking.*

INTRODUCTION

In today's digital era, human life is inseparable from technology, especially smart devices such as smartphones and computers that are always connected to the internet. One phenomenon that is increasingly felt by the public is the emergence of online advertisements that feel very personalised and match the interests or even conversations that have just been had. Many people, including students, have begun to notice that adverts on their social media, apps or browsers often display products or services that are relevant to what they have just been talking about in their daily lives. This has raised concerns about privacy and personal data security in the digital world. Online ad tracking of Collage Student is the practice of collecting and analysing data about students' online behaviour in order to display more relevant and personalised advertisements. This practice involves the use of various technologies such as cookies, tracking pixels, and device identifiers to collect information about students' interests, preferences, and shopping habits(Krisdianto et al., 2019). The other definition Online ad tracking is the systematic process of collecting data about users' activities and behaviour on the internet. Advertisers collect data about students' online activities in various ways, including cookies, small files stored in web browsers to track the websites visited and activities on those sites, small images embedded in websites or emails to track whether users have viewed certain content, and device identifiers or unique information that identifies the devices students use to access the internet(BINUS University, 2025). The goal is to understand their interests, preferences, and digital habits, which are then used to serve highly relevant and personalised ads. It also allows advertisers and platforms to measure the effectiveness of their campaigns, optimise targeting, and increase return on investment (ROI). Fundamentally, online ad tracking seeks to build a detailed digital profile of each individual. This profile is built from the various digital footprints we leave behind when interacting with the virtual world. As Daniel J. Solove, a legal scholar and privacy expert, who has written extensively on digital surveillance, puts it "Privacy isn't just about hiding things; it's about controlling how your information is used. In the context of ad tracking, this means how our behavioural data is collected, analysed and then used to influence what we see and buy, often without our full knowledge or consent."(Hannabuss, 2010)This topic is very relevant considering that almost all activities in today's society rely on digital technology and internet connection. The rise of privacy concerns not only impacts users' trust in technology, but also raises ethical issues related to the massive collection and use of personal data by technology companies. This phenomenon also shows the importance of digital literacy so that people better understand how their data is collected,

analysed and used, and are able to make wise decisions in maintaining privacy in the digital space. By understanding how online advertising works and how digital data is used, people can raise awareness of potential privacy violations and minimise the risk of behavioural manipulation through personalised advertising. Therefore, it is very important to discuss digital ad tracking and user perceptions of it in this era of advanced technology.

This report aims to analyse and understand the phenomenon of online advertisements that appear highly personalised and relevant to users' conversations or activities, as experienced by a university student who noticed that advertisements on his mobile phone often corresponded to topics he had just talked about in his daily life. This phenomenon raises big questions in society about how ad tracking systems actually work, whether digital devices actually listen to conversations, and the extent to which personal data is collected and utilised for commercial purposes. The main objective of this report is to explore users' perceptions and experiences of targeted adverts allegedly linked to private conversations, and examine the ethical and psychological implications of this phenomenon. In addition, this report aims to provide a deeper understanding of the mechanics of digital ad tracking, as well as how technology companies leverage user behaviour to create more effective ads. Through the presentation of these findings, it is hoped that this report can raise public awareness about the importance of digital literacy and privacy security in the modern era, and encourage users to take wise steps to protect their personal data from potential breaches or misuse.

The research in this report uses a qualitative approach with a case study method to explore the phenomenon of online ad tracking experienced by a university student. The case study was chosen so that the researcher can get a real and in-depth picture of the experiences of individuals who feel the correspondence between their daily conversations and advertisements that appear on their digital devices. To corroborate the results of the case study, this research also uses a semi-structured interview method with several individuals who have similar experiences. The interviews aimed to explore respondents' perceptions, concerns and understanding of how digital advertising works, as well as how they interpret the appearance of adverts that are perceived to be 'too targeted'. Respondents were purposively selected to match the characteristics of active users of digital devices and social media.

METHOD

This study is designed to explore a phenomenon that is increasingly relevant in the digital age: how personalised online advertising affects user privacy and perceptions, particularly when personal experiences trigger suspicions that smart devices may be 'listening.' In order to achieve this comprehensive understanding, we adopted a qualitative approach, which allows us to explore the nuances of individual experiences, perceptions, and feelings in depth. This approach was chosen

given the complexity and subjective nature of human interactions with digital technology. The research design we used was an exploratory case study expanded through a series of multi-subject qualitative interviews. This research began with a core case study involving a college student, whose personal experience became the starting point for our exploration. This design not only facilitates a deep dive into the specific context of that individual's experience but also allows us to gather diverse perspectives from other participants who have experienced similar phenomena. Through this approach, we aim to build a rich and layered understanding of how individuals perceive and respond to the presence of online ad tracking. For participant selection, we used purposive sampling techniques. The main criterion for participant inclusion was that they must have had personal experience where online advertisements on their smartphones or digital devices appeared to be highly relevant to the topic of a recent personal conversation they had had. Additionally, participants must be active users of smartphones and various digital platforms that display advertisements, and willing to openly share their experiences, perceptions, feelings, and knowledge during the interview sessions. Although this study focuses on one university student as the initial case, we expanded the scope by interviewing several other individuals—with a target of five to ten participants, adjusted to achieve data saturation—who met the established criteria. We also considered the diversity of participants' backgrounds, such as age, occupation, and level of familiarity with technology, to obtain a broader spectrum of perspectives.

Data collection was conducted through interviews, both face-to-face and online using video conferencing platforms, according to the availability and preferences of the participants. Each interview session was audio-recorded after obtaining full consent from the participants. Prior to the interview, each participant was provided with a comprehensive explanation regarding the research objectives, the assurance of confidentiality of their personal data, and their rights as participants.

FINDINGS AND DISCUSSION

This section presents the key findings revealed by our qualitative research on individuals' experiences with personalised online ad tracking, specifically in the context of a case study of a university student and similar experiences from other participants. The data found provides deep insights into users' perceptions, feelings, and level of knowledge about ad tracking mechanisms, while highlighting the dissonance between popular beliefs and technical realities.

The results of the analysis from the interview with Muhammad Riyanto indicate that although individuals are aware of the importance of maintaining digital privacy, there are limitations in the effectiveness of the efforts made. Riyanto has actively implemented various technical measures such as turning off location services, deleting history and cookies, using adblock, and disabling ad personalisation on his Google account. However, the fact that relevant ads continue to appear

indicates that these efforts are unable to completely prevent tracking that occurs behind the scenes of digital systems. In Riyanto's view, there is a kind of 'helplessness' towards a system that constantly adjusts content to personal preferences, as if user data and behaviour were never truly private. This reflects the imbalance between users and the technology used by large digital platforms, where even though users have taken preventive measures, they still feel watched and shadowed. The emotional response expressed by Riyanto also highlights psychological ambiguity. On one hand, he expresses admiration for the sophistication of technology that can so accurately predict his interests. On the other hand, he feels suspicious, uncomfortable, and even afraid that his device might be secretly 'listening' to his private conversations. Feelings of unease and anxiety reflect the emotional tension experienced when the boundaries between private and digital spaces become blurred. What is interesting is Riyanto's final attitude, which shows a form of passive adaptation to this situation. He admits that because he has experienced similar things too often, he eventually just lets it happen. This shows that despite the discomfort, most individuals tend to normalise tracking practices as part of today's digital reality, rather than actively rejecting them or seeking more radical solutions. This attitude has the potential to make individuals increasingly vulnerable to data exploitation as the threshold for vigilance against privacy violations continues to diminish.

Overall, this interview reflects the complex dynamics between privacy awareness, the effectiveness of digital protection, emotional responses to personalised advertising, and the tendency to accept the situation as inevitable. This phenomenon highlights significant challenges in building stronger privacy awareness and protection amid the increasingly sophisticated development of digital advertising technology.

Based on the interview with Muhammad Syahril, it appears that the interviewee's knowledge of how online ad tracking works is still limited. The interviewee mentioned that he is familiar with the term 'cookies' and is aware that users must give their consent before their data is collected. However, their understanding appears to be incomplete regarding other tracking mechanisms such as the use of location data, search history, or app interactions. This reflects that the general public's understanding of digital ad tracking technology remains superficial and often based on brief exposure or superficial information. Furthermore, the respondent's answers emphasised reactions to the results of tracking rather than preventive measures taken. There was no detailed explanation of specific steps taken to protect privacy, which may indicate that awareness of technical measures to protect oneself from tracking is still low. Furthermore, when responding to the appearance of ads relevant to their needs, the interviewee expressed feelings of satisfaction and did not show any concerns or suspicions, unlike in previous interviews. They felt that the appearance of relevant ads was convenient, as what they needed was immediately available to them. This response shows acceptance of personalised

advertising as something beneficial. The absence of rejection or discomfort indicates that some users actually view tracking as a positive feature rather than a violation of privacy. This could be an indicator that some people still prioritise convenience and efficiency in their digital experience over the protection of personal data.

Overall, the analysis of these interviews reveals a gap between technical understanding of ad tracking and acceptance of its impacts. Respondents exhibit a permissive attitude toward highly relevant ads, even viewing them as a helpful solution. This poses a unique challenge in efforts to improve digital literacy and privacy awareness, as invasive technologies can be easily accepted if their practical benefits are perceived to outweigh the risks.

Interviews with two sources revealed different but complementary dynamics in viewing the phenomenon of online ad tracking and digital privacy awareness among individuals. The first interviewee demonstrated a fairly high level of awareness regarding ad tracking issues. They have actively implemented various technical measures such as disabling location services, deleting cookies and browsing history, installing ad blockers, and disabling ad personalisation. However, despite these protective measures, they feel that these efforts are not entirely effective, as the ads that appear are still highly relevant to their interests. They also expressed emotional ambiguity toward ad personalisation: a mix of admiration and suspicion, along with discomfort that has gradually become normalised. This reflects the complexity of modern digital experiences, where individuals are aware of tracking yet still feel trapped within an ecosystem that is difficult to avoid. Meanwhile, the second interviewee demonstrated a more limited understanding of digital tracking mechanisms. He was familiar with the term cookies and understood that users must give their consent, but did not explain much about the technical measures taken to protect his privacy. Reactions to relevant ads were actually more positive; they felt happy because their needs or desires could be directly fulfilled through the ads that appeared. There were no expressions of concern or discomfort, indicating that some users actually view personalisation as something beneficial and not problematic.

These two sources represent two types of public response to online ad tracking: one is critical and cautious but is starting to tolerate the situation, while the other is more permissive and sees it as a convenient feature. This conclusion indicates that digital literacy and privacy are still very diverse at the individual level. On one hand, there is a need to strengthen education and technical awareness, and on the other hand, it is also important to understand that digital convenience and efficiency often serve as the primary reasons behind acceptance of data tracking. The combination of low effectiveness in privacy protection and the normalisation of tracking practices creates serious challenges in maintaining data sovereignty in the increasingly sophisticated era of digital advertising.

The first interview findings highlight the complex dynamics surrounding digital privacy, user awareness, and emotional responses to technology. Although individuals such as the interviewee recognise the importance of maintaining digital privacy, their efforts are often ineffective (Osmani, 2016). He has taken various steps to protect his privacy, such as disabling location services and using ad blockers, yet he still sees targeted ads. This indicates that privacy protection measures are insufficient to counter the widespread tracking mechanisms employed by digital platforms (Song et al., 2023). He expressed a sense of powerlessness regarding these systems, which constantly adapt to user preferences, reinforcing the feeling that personal data is never truly private. The imbalance of power between users and technology makes many people feel watched and vulnerable, even though they have tried to protect their information (Aguirre et al., 2016). This 'creepy' feeling can stem from privacy concerns and a sense of identity threat. Emotionally, this experiences duality: he admires the sophistication of technology that can accurately predict his interests, but he also feels suspicious and anxious, worried that his device might be 'listening to him.' This tension reflects the blurred line between personal and digital space, which causes feelings of discomfort. Such psychological reactance can be caused by 'epistemic fragmentation' and a sense of being watched. Personalised ads, while potentially effective, can also reduce consumers' psychological sense of ownership, leading to less satisfying ad outcomes (Kim & Jeong, 2023). Interestingly, he has developed a passive acceptance of this tracking practice over time. He admits to 'letting it happen,' highlighting a trend where individuals normalise invasive practices rather than actively opposing them. This normalisation can increase vulnerability to data exploitation, as users become less vigilant about privacy breaches. This echoes the idea that experience with privacy regulations does not automatically guarantee privacy control. This reveals significant challenges in fostering stronger privacy awareness and protection amid increasingly sophisticated digital advertising technologies. Users may feel overwhelmed and resigned, which reduces their ability to take effective action to protect their privacy. It is crucial to increase user awareness of how algorithms work to empower them with control over their information (Prince et al., 2023).

The second interview finding highlights the limitations of public understanding of online ad tracking and the dilemma between privacy and convenience. Although he is aware of the existence of 'cookies' and the need for consent, his knowledge of more complex tracking methods is still superficial. This reflects a broader problem, namely that the general public's understanding of digital ad tracking technology is still incomplete (Ross, 2017). The tracking results show a lack of awareness of available privacy protection tools, rather than preventive measures. Satisfaction with relevant advertisements, regardless of privacy, indicates a prioritisation of convenience over data protection. The acceptance of personalised advertisements as something beneficial indicates the normalisation

of tracking practices among some users. This normalisation poses challenges in advocating for stronger privacy protection. Prioritising convenience over privacy can lead to users being less motivated to demand better data protection. Therefore, there is a need to increase education about digital privacy and tracking mechanisms to foster critical awareness among users. This education should empower users to make informed decisions about their digital behaviour.

The interviews revealed tension between individuals' awareness of digital privacy and their ability or willingness to protect it effectively. Respondent 1, despite having taken technical measures, felt powerless in the face of widespread tracking, experienced emotional discomfort, and ultimately accepted it passively. Respondent 2 demonstrated limited understanding of tracking mechanisms beyond cookies, coupled with a prioritisation of convenience over privacy. Relationship with Literature and Significance this is in line with research showing that although many individuals express concerns about online privacy, their knowledge of data collection practices and privacy settings remains limited. This gap between awareness and action is a significant challenge in promoting effective privacy practices (Lee & Attablayo, 2023). These emotional responses include admiration for technological sophistication and anxiety about privacy violations, illustrating the blurring of boundaries between personal and digital spaces. Emotional reactions to personalised advertising can vary; while some people may feel comfortable, others feel uncomfortable, reflecting the tension that affects user engagement with advertising. A superficial understanding of these tracking methods reveals broader social issues in which many individuals lack comprehensive knowledge about digital advertising technology. Their satisfaction with relevant advertising shows that they prioritise convenience over privacy, highlighting the normalisation of tracking practices that can weaken advocacy for stronger privacy protection. This normalisation not only reduces users' motivation to demand better data protection but also increases their vulnerability to data exploitation. The importance of these findings is underscored by the need for increased education about digital privacy and tracking mechanisms. Experts emphasise that raising awareness alone is insufficient; users must be equipped with knowledge and practical tools to make informed decisions about their digital behaviour. Key concepts such as ad tracking mechanisms, data privacy laws, and misinformation tactics are crucial to understanding this landscape. Ad tracking involves methods such as cookies, pixel tracking, and location data collection, which advertisers use to gather insights into users' behaviour and preferences.

To effectively address these challenges, experts recommend a multi-faceted approach. This approach includes increasing transparency in data practices, promoting ethical advertising, and building a privacy culture that respects individual rights. Furthermore, empowering users with control over their data through education and advocacy for stronger privacy regulations is crucial. By

implementing these strategies, a more privacy-conscious digital landscape can be created, balancing the benefits of technology with the need for data protection (Chu, 2023).

This finding is in line with the Privacy Calculus theory developed by Culnan and Bies (2003), which states that individuals will make rational considerations between the benefits they obtain and the risks they face when sharing personal information in the digital realm. In this context, the second interviewee appears to lean more towards the benefits side, as they feel assisted by personalisation, while the first interviewee perceives greater risks despite continuing to use the digital service (Culnan & Bies, 2003). Furthermore, approach to Surveillance Capitalism is highly relevant in explaining how digital tracking has become systematic and is not always recognised by users. Zuboff emphasises that digital systems now not only provide services but also aggressively collect and monetise user behaviour for economic gain. This explains how the first interviewee, despite having taken steps to protect their privacy, still feels 'haunted by the internet,' as tracking systems operate latently and comprehensively (Zuboff, 2019). Users' understanding of privacy and technology greatly influences how they interact in the digital space. The second interviewee, who had less understanding of tracking mechanisms, appeared to be more passive and permissive towards the advertisements that appeared, while the first interviewee, who was more digitally literate, showed a more critical attitude but remained in a difficult position to completely escape tracking (Livingstone & Helsper, 2007). With reference to these theories, these findings underscore the importance of improving critical digital literacy in society, especially in terms of understanding how personal data is collected and used. Otherwise, the convenience of using technology will continue to obscure awareness of potential privacy violations, as demonstrated in the case of the second informant.

CONCLUSION

The case study and research on digital privacy reveal important insights through interviews with Muhammad Riyanto and Muhammad Syahrial. From Riyanto's interview, it emerges that while individuals recognize the significance of digital privacy, their efforts to maintain it often fall short. Despite employing various technical measures like disabling location services and using ad blockers he continues to see relevant ads, indicating that these efforts do not fully prevent tracking. This leads to a sense of helplessness, as users feel that their data and behavior are not truly private. Riyanto's emotional response reflects an inner conflict; he admires the technology's ability to predict his interests but also feels suspicion and discomfort, fearing that his device might be intrusively monitoring him. His passive adaptation to this situation suggests that many individuals normalize tracking practices, accepting them as part of the digital landscape, which may increase their vulnerability to data exploitation. In contrast, Syahrial's interview highlights a limited understanding

of online ad tracking. While he knows about cookies and user consent, his grasp of other tracking mechanisms such as location data and search history is superficial. His responses focus more on the outcomes of tracking rather than preventive actions, indicating a low awareness of privacy protection measures. Interestingly, Syahrial expresses satisfaction with personalized ads, viewing them as convenient rather than intrusive. This acceptance suggests that some users prioritize the efficiency and convenience of their digital experiences over concerns about privacy violations. Together, these findings illustrate a complex relationship between users and digital privacy, characterized by a mix of awareness, resignation, and even acceptance of tracking practices. This dynamic points to a broader trend where convenience often outweighs privacy concerns in the digital realm.

Reflecting on the findings from the case study, the importance of digital literacy becomes evident in preventing misinformation, ensuring safety, and making informed decisions online. Digital literacy empowers individuals to understand the tools and technologies they use, allowing them to critically evaluate the information they encounter. A digitally literate person can discern credible sources from unreliable ones, which is crucial in combating the spread of misinformation. By being aware of how algorithms curate content, users can question the reliability of the information presented to them, leading to more informed opinions and actions. Moreover, understanding digital privacy measures—such as the implications of cookies, location tracking, and data consent—enables users to take proactive steps to protect their personal information. This knowledge can help mitigate feelings of helplessness and increase trust in digital environments.

Digital literacy also fosters critical thinking, which is essential for weighing the benefits and risks of personalized advertising and data sharing. When individuals understand these dynamics, they are better equipped to make informed choices about their online behavior and privacy preferences. To promote responsible online behavior, individuals should prioritize educating themselves about digital privacy tools and practices. Regularly updating one's knowledge about how tracking works and what measures can be taken to protect data is essential. Additionally, being critical of the information consumed is vital; verifying the credibility of sources before sharing or acting on information can significantly reduce the spread of misinformation. It's also important to implement privacy settings on devices and accounts, such as disabling location services and using ad blockers. Understanding the privacy policies of the platforms used is crucial for maintaining control over personal data. Being mindful of the information shared online is another key aspect of responsible behavior. Individuals should consider whether it's necessary to provide certain data and may opt out of services that require excessive personal information.

Engaging in discussions about digital privacy and online behavior with friends and family can help create a more informed community that values privacy and responsible conduct. Finally,

reflecting on the trade-offs between convenience and privacy is essential; while personalized ads may seem beneficial, it's important to consider whether that comfort is worth potential invasions of privacy. By fostering digital literacy and encouraging responsible online behavior, individuals can navigate the complexities of the digital landscape more effectively, enhancing their safety and privacy while minimizing susceptibility to misinformation.

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