

Impacts of Targeted Advertisements on Privacy Rights: A Meta-analysis Study

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Received on: 05 February 2024

Accepted on: 25 May 2024

Published on: 09 June 2024

ABSTRACT

The paper explored the changes that digital privacy rights have witnessed in this era which includes a substantial technological boom that has infiltrated individuals' public and private lives through modern means of communication. To achieve this purpose, the researcher conducted a meta-analysis that included reviewing the previous studies that dealt with the topic and examined the aspects of accordance and differences between them and the most prominent results to be reached. The paper reviewed all studies published during the period from 2011 to 2023 that addressed the issues of privacy rights considering advertisers targeting of them. Focusing only on relevant studies, the total number reached twenty-five, findings revealed that various factors influence consumers. Acceptance to be targeted by personalized online advertising such as privacy concerns, perceived risks, and benefits are the essential aspects of this study.

Keywords: Targeted advertising, Privacy rights, Facebook sponsored advertisements, Communication privacy management theory (CPM).

1. INTRODUCTION

Online advertising has become a dominant marketing technique, commanding most of the spending and taking over from traditional broadcast advertising in newspapers, television, and radio. This is basically due to the ability of online advertisement platforms to tailor or personalize ads and target specific customer segments. Targeted advertising is based on big data analytics, where users' personal information is collected and processed to enable categorizing users into groups. These groups are based on interests, location, or personal attributes like age, gender, etc., with a varying size of the selected customer segment, down to the level of an individual.

The platforms from which personal data are collected and subsequently used for targeted ads are pcs, laptops, and mobile devices due to its widespread and

almost continuous use by a vast audience of potential ad recipients. Millions of apps can be downloaded via multiple app marketplaces like the Google Play Store and the Apple App Store (Ullah, Boreli, & Kanhere 2023).

Most apps contain at least one ad library (Gao et al. 2022) that enables targeted (or behavioral) advertising to a wide range of audiences. The information about users and their online behavior is collected once they are connected to the Internet. This includes information inference based on monitoring ads displayed during browsing sessions (Barbosa et al. 2021). Advertising and Analytics (A&A) companies like Google Analytics and Flurry use this framework work to increase their revenue by providing ad libraries that the apps developers use to serve ads (Estrada-Jiménez et al. 2017). In data monetization, advertising/analytics companies aggressively look for all possible ways to gather personal data from users, including

purchasing users' data from third parties.

The collection and use of personal data pose severe threats to users' privacy (Ullah et al. 2017), when websites or apps, indicating sensitive information are used as the basis for profiling, e.g., a gaming app showing a gambling problem. Policymakers have increasingly recognized privacy concerns by introducing anti-tracking laws, gradually making some third-party tracking techniques used for interest-based targeting obsolete. To illustrate, Google has announced Chrome's 'Cookie Apocalypse', planning to phase out support for third-party cookies by 2022. Subsequently, instead of relying on third-party data, the A&A companies are increasingly using first-party data and shifting towards maintaining their own Data Management Platforms (DMPs) and Demand-Side Platforms (DSPs) to brand their data and measure performance in a 'cookie-less' world. In a stronger push towards an increased user's privacy control over the collection and use of their data, Apple has recently introduced the Identification for Advertisers (IDFA) opt-in overhaul in iOS 14.5, which will significantly affect targeted ads and mobile ad/data attribution. This has created a public feud with one of the largest social networks (and private data collection companies), Facebook, highlighting two different business approaches regarding privacy and user targeting.

1.1 Research Problem

The relationship of targeted advertising to the issue of digital users' privacy represents a major research problem that has attracted significant research interest for quite some time. Peer-reviewed scientific journals publish many papers that investigated this phenomenon.

Therefore, the study examines the effects of targeted advertisements on users' privacy, as determined from extant literature. Considering this goal, this study seeks to achieve the following objectives.

1.2 Research Objectives

1. To assess the relationship between the awareness of targeted advertisements and awareness of privacy rights.
2. To determine the challenges and consequences resulting from online targeted advertising on Egyptian youth.
3. To investigate the privacy concerns of Egyptian youth (Gen Z) while using social media.
4. To examine the consumer perception of targeted advertisement and the awareness of privacy among Egyptian youth while using social media.

1.3 Significance of the Study

This study sheds light on the impact of targeted advertising and privacy rights on Egyptian youth through examining several key variables by investigating the awareness level of targeted advertisements and the perception of challenges resulting from online advertising. Accordingly, the significance of the current study is to fill the gap of knowledge about the awareness level of targeted advertising among Egyptian youth as they face digital problems daily. Moreover, it aims at understanding the main challenges and consequences resulting from online advertising with youth, especially with the increasing level of using the technique of targeted ads and the exposure level. This study also raises awareness of privacy rights among Egyptian youth, as long as the society has faced negative consequence like privacy concerns. Additionally, it develops a social media guide to empower Egyptian youth to have control over the information they share on Facebook.

1.4 Research Question

This paper seeks to answer the following main question: "What are the effects of digital users' exposure to targeted ads on their privacy especially those related to privacy concerns, perceived risks, and benefits, according to what previous studies have concluded?"

2. METHODOLOGY

To answer the research questions, the paper has utilized meta-analysis. Meta-analysis is a central method for knowledge accumulation in many scientific fields (Aguinis et al. 2011; Kepes et al. 2013). Similar to a narrative review, it serves as a synopsis of a research question or field. However, going beyond a narrative summary of key findings, a meta-analysis adds value in providing a quantitative assessment of the relationship between two target variables or the effectiveness of an intervention (Gurevitch et al. 2018). Also, it can be used to test competing theoretical assumptions against each other or to identify important moderators where the results of different primary studies differ from each other (Aguinis et al. 2011; Bergh et al.

2016). Rooted in the synthesis of the effectiveness of medical and psychological interventions in the 1970s (Glass 2015; Gurevitch et al. 2018), meta-analysis is an established method in communication research and related fields. The paper reviewed studies published during the period from 2011 to 2023 and addressed the issues of privacy rights in light of advertisers' targeting of them. Restricting only to relevant studies, the total number reached twenty-five.

3. FINDINGS

This study primarily focuses on privacy concerns, perceived risks, and benefits associated with such ads. Moreover, it explores how individuals' academic backgrounds affect their levels of privacy concern and perceived risk.

Parra-Arnau et al. (2017) describe the process of targeting as follows: "advertisers can reach their target audience through contextual and semantic advertising by directing ads that are relevant to the content of the Website where they will be displayed" (6-7). Contextual targeting operates based on thematic keywords, which are determined by a range of factors including language, recent browsing history, and geographical location.

In recent years, personalized online marketing has emerged as a compelling field of research, fundamentally altering the traditional notion of mass marketing by enabling tailored targeting of individual customers. It is mentioned as a specific design to offer the best to the particular needs of the customers (Estrada-Jiménez et al. 2017), provides the right type of offers to the consumers at the right time (Jung 2017), and is mentioned as the most effective marketing method and strategy in recent years (Estrada-Jiménez et al. 2017). The goal of personalized marketing is to target and engage customers through one-on-one communication (Jung 2017).

The advent of artificial intelligence technology has made it feasible to deliver personalized content by collecting and analyzing data from online consumers (Jung 2017). Organizations gather and store customers' personal data within databases, intending to utilize this information for targeting users with advertisements that align closely with their profiles. These advertisements typically manifest as banner or sidebar ads on web pages or social media platforms (Lambrecht & Tucker 2013). In this domain, personalization stands as a fundamental theoretical concept, characterized by "the process of creating customized communication

directed towards a particular customer, which is crafted based on the customer's expressed or inferred interests" (Tran 2017, 231). Personalization holds significance as it facilitates the exploration of the reasons behind users' acceptance or rejection of advertisements. Examining these motivations behind user engagement aids advertisers in comprehending consumer responses to various types of advertising on platforms like Facebook. The increasing popularity of personalization in advertising can be attributed to advancements in technology and the surge in social media usage. Social media platforms offer a user-friendly environment where individuals freely share their interests, experiences, and daily activities. Leveraging this wealth of data enables advertisers to deliver highly pertinent ad messages tailored to consumers' demographic, geographic, and psychographic characteristics (Jung 2017, 303).

For example, a bridal shop might promote "local bridal shop ads to women whose relationship status is 'engaged'" (Daems et al. 2019, 125). Most advertising professionals recognize the value of advertising on Facebook because, unlike most other advertising methods, the SNS allows you to target a product or service to a specific customer (Wiese et al. 2020). Previous research in this area has discovered that varying personalization degrees can produce positive and negative outcomes (Aguirre, Mahr, Grewal, de Ruyter & Wetzels 2015). As a result, literature on this topic is helpful to advertisers because by learning how consumers perceive personalized advertisements, marketers can develop better digital practices to reach their target audiences.

4. LITERATURE REVIEW

4.1 The Role of Online Targeting and Personalization in the Evolution of Advertising Strategies

Throughout history, advertisements have served as a tool to promote the sale of particular products. These promotional materials have been disseminated through diverse media channels such as magazines, radio broadcasts, and television programs. However, the evolution of the Internet in the past two decades has introduced a novel platform for advertising. In this digital realm, advertisers face a multitude of opportunities and challenges as they endeavor to connect with their target audiences (Watkins 2019).

Despite the potential drawbacks associated with online advertising, advertisers continue to achieve success in ensuring their ads reach their intended audience.

They accomplish this by employing online targeting strategies aimed at personalizing advertisements to individual consumers, thereby enhancing their effectiveness and impact (Tran 2017). Companies pinpoint the precise consumers who either already purchase their products or are potentially interested in buying them, and the majority can achieve this goal (Tran 2017). Brands can target consumers more precisely by using social media and search engines that collect a wealth of personal user information (Tran 2017).

Although advertisements can be found on almost any website, advertisers are particularly interested in social networking sites (SNS) and online communities because "social networking sites (SNS) and online communities have become the top online destinations on the web" (Hodis et al. 2015, 1255). Facebook, in particular, is a dominant player in this category, with an average of 1.37 billion daily active users (Hodis et al. 2015).

Users can connect with friends on Facebook, send personal messages, and update their profiles to inform their friends about themselves (Quan-Haase & Young 2010). Many people prefer to use Facebook as an advertising platform because it allows them to target people based on a wealth of demographic information collected by the SNS and made available to those who pay to advertise on the SNS (Hodis et al. 2015). This is possible because Facebook allows targeting based on what people reveal about themselves on their personal pages, such as demographic information and interests (Wiese et al. 2020). Audiences, for example, can be targeted based on a variety of factors such as location, age, and relationship status (Wiese et al. 2020). Facebook's precision targeting capability enables advertisers to target specific audience segments effectively, altering users' perceptions of ads on the platform. Rather than encountering a barrage of irrelevant ads, users are presented with tailored advertisements that align with their preferences (Wiese et al. 2020). Alternatively, Facebook advertisers utilize pixels, small code snippets that track user actions on particular web pages, to target individuals effectively. Facebook defines this as "an analytics tool that allows you to measure the effectiveness of your advertising by analyzing the actions people take on your website" (Facebook 2019). The pixel must be installed on a web page first, and then it can track digital interactions with content on a website, Facebook page, and other third-party websites. According to Facebook, this is one of their business tools, and it is why people see advertisements based on products or services they have looked at online (Guess et al. 2019). Pixels are related to

cookies, another tracking technology, but they are not the same thing (Eberz, et al. 2019). A pixel is a block of code that is stored within a website's pages, and cookies are stored in a web browser (Eberz, et al. 2019). A pixel assists advertisers in reaching the right people and measuring ad performance.

In contrast, search engines use cookies to remember a user's site preferences, such as items in an online shopping cart (Eberz, et al. 2019). In other words, pixels transmit data while cookies store it. So, whether the data is collected on users' devices or submitted by them when signing up, it can be incorporated into advertising strategies in both cases (Bang & Wojdyski 2016). Facebook's machine learning-powered advertising platform aims to maximize advertising effectiveness by providing its users with a highly personalized advertising experience. Billions of Facebook users are daily bombarded with information from their friends, family, coworkers, media outlets, and advertisers.

4.2 Social Media Marketing and Privacy Issues

Whether or not consumers realize an advertisement is personalized influences whether or not they are receptive to the ad. The Federal Trade Commission (FTC) has put in place rules to ensure that consumers understand what is and is not advertising. For example, Facebook must include "a 'Sponsored' label to a sponsored post" to indicate that it is advertising (Boerman, Willemsen & van Der Aa 2017, 83). Furthermore, the FTC pushed the Ad Choices Icon program, which "promotes the use of an icon...that should be displayed in or near online advertisements or on webpages where data is collected and used for online behavioral advertising" (Brinson & Eastin 2016). The goal of these labels is to "inform consumers of data tracking practices," but not all Internet users understand what they mean (Brinson & Eastin 2016).

Certain customers are comfortable with receiving personalized advertisements, provided they are informed about the transparent acquisition of their information. A study focusing on the perception of digital advertising, particularly regarding the Ad Choices icon, found that individuals are receptive to personalized messages when they understand the symbol's meaning. (Brinson & Eastin 2016). Boerman, Willemsen, and van Der Aa (2017) expanded on this finding by applying their research to sponsored Facebook posts, revealing that brand-sponsored Facebook posts do not require as much disclosure because people recognize they are advertisements

(Boerman et al. 2017).

On the flip side, there are individuals who have reacted negatively to personalized advertisements upon realizing that their information was collected covertly, leaving them feeling as though their privacy had been violated. Aguirre, Mahr, Grewal, de Ruyter, and Wetzels (2018) investigated consumer awareness of information collection concerning digital advertising. They discovered that when consumers realized through the advertisement's content that their personal information had been secretly collected, they were less likely to click on the advertisement and felt vulnerable (Aguirre et al. 2018). This implies that advertisement personalization is only advantageous if people know that their personal information is being collected for targeting purposes. Some customers believe that companies have crossed the line when they feel creeped out while viewing an advertisement that contains too much personal information. As a result, when consumers believe that businesses are overly intrusive, they develop negative attitudes towards advertised brands.

4.3 Perception of Online Behavioral Advertisement

4.3.1 Efficacy of Personalized Advertisements

Numerous researchers have sought to explore the concept of personalization and its impact on consumer perceptions of advertisements (Kim et al. 2017). According to Kim et al. (2017), one reason for the popularity of online behavioral advertising (OBA) is that advertising networks charge higher prices for targeting ads, so advertisers prefer to use OBA1 to reach relevant consumers based on their interests. Reduce advertising budgets by using Online Behavioral Advertising: A Case Study of Belgian and Turkish Spotify Users' Privacy Concerns. According to Carrascosa et al. (2015), unlike other methods, OBA takes a more specific approach to personal data, which can then apply to online behavior. OBA is distinct from other targeting methods that rely on users' current behavioral data.

Because this method of targeting is based on clicking preferences, the Canadian International Advertising Bureau (Tucker et al. 2014) refers to it as "interest-based targeting" for behavioral targeting. For example, Google AdWords, a Google advertising program, uses demographic, gender, location, and language data and audience interest data to target consumers ("personalized advertising," Tucker et al. 2014). Companies and retailers can reach out to customers

based on their specific interests using this type of targeting. These interests can be identified when users browse Google's network of apps, webpages, channels, and content (Tucker et al. 2014). In a video interview with Nick Stringer, director of the Interactive Advertising Bureau, Stuart Coleman, managing director of European Operations at Audience Sciences, explains how interest targeting is another type of OBA using a simple example of a video interview with Nick Stringer, the Interactive Advertising Bureau's director of regulatory affairs.

Fundamentally, behavioral advertising is about matching users' interest to the advertising that they see and to come. For example, if you are looking to buy a car, your market for buying a car. When you go online, you will perform certain actions that would suggest you are interested in buying a car. The kind of content you read around product reviews of the particular manufacturer you are interested in or its competitive set car searches where you are looking for information about that particular type of car. Those actions will show that you are interested in buying a car. Online advertising is a process where during that kind of you are looking at content (Katz 2022).

Stallone et al. (2022) identifies four primary OBA methods used by marketers: "spyware-based," "deep-packet inspection," "cookie-based," also known as "third-party targeting," and "first party" (7). Each method aims to target consumers by using behavioral data, but they differ in how they do so. Spyware-based and deep-packet inspection are not popular methods among advertisers today because they are not visible to or avoidable by consumers. However, cookie-based and first-party methods of OBA are particularly popular (Stallone et al. 2022, 7).

Online advertising solves one of the troubles faced by the advertising industry. It is the desire to send various messages to a large number of consumers. The advertiser can target their message to specific consumers who are qualified to receive it and are likely to purchase after seeing it. IP addresses from internet users are used to identify that specific target market. This data provides valuable details about the individual user, such as location, habit pattern, and previous websites visited. Online advertising has a high economic effectiveness. Online advertising reduces the content creation budget to reach and select potential customers.

The percentage of total exposure that causes the surface on the banner to respond by clicking on an ad message is also used to determine the effectiveness of online advertising. The Click-through Rate (CTR) is

a measurement of that effectiveness. The advertiser expects CTR to increase the effectiveness of online ads delivered to consumers/internet users. CTR prediction is divided into four steps. The first step is featuring extraction, followed by model building. Model training is the third step, and model estimation is the final step. However, low CRT cannot be used to predict the effectiveness of online advertising. CTR only provides a short-term measurement of the effectiveness of online advertising. Ad repetition could have a long or short-term impact in the form of brand awareness or message awareness on ads.

CTR is also recognized as a payment method for online advertising. It is commonly utilized by websites that provide space for advertisements. In contrast, the pay-per-action model represents an alternative method for determining payment rates in online advertising. This model involves the collaboration of various entities, including the publisher (such as Google or Yahoo!), the advertiser, and the internet users who interact with the ads. The process commences when the advertiser solicits the desired web page from the publisher. Subsequently, the publisher exhibits the advertisement on that particular web page. Apart from clicking through, internet users may engage by filling out forms on the advertiser's website, registering as members of the website, or purchasing products from the advertiser's website. These actions, classified under "action," encompass user responses that remain beyond the control of the publisher. The term "action" refers to user responses that the publisher cannot control.

Consumers benefit from online advertising in some ways. Consumers who want to look for product references or information before purchasing do not have to pay for magazines or newspapers. Consumers also receive useful information, which saves them time searching for information about the product or service they wish to purchase. According to several studies, many internet users avoid online advertising because it is considered annoying. According to Kelly, Kerr and Miia (2019), internet users avoided advertisements because they were irrelevant to their interests and the messages were deemed untrustworthy. Another reason internet users avoid online advertising is because they have had negative experiences with online advertising, either personally or through relatives. When a user clicks on an ad banner, the user's computer becomes vulnerable to a virus or misinformation that third parties misuse.

Based on existing research on personalization in digital advertising, it is clear that its use has benefits and drawbacks, and the amount used can either help

or hinder the initiative's success. According to Jung (2017), attention interacts with personalization.

In her comprehensive study, she delved deeply into the dynamics of consumer response to advertisements, particularly focusing on the intricate relationship between consumers' perception of personal relevance and their reactions to ads. Through meticulous examination and analysis, she sought to uncover the nuanced ways in which consumers' perceptions shape their responses to advertising stimuli (Jung 2017). The results of a survey with advertising questions revealed that if advertisements on social media are more personally relevant to the viewer, the viewer is less likely to avoid them and more likely to pay attention to them. This observation suggests that personalized advertisements tend to attract more attention, and when they are perceived as relevant to the consumer, they are less likely to be disregarded or consciously avoided. In essence, the alignment of personalized ads with individual preferences enhances their effectiveness in capturing consumer interest and engagement.

Bang and Wojdyski's (2016) findings support Jung's (2017) findings and add that personalized advertisements capture users' attention, and personalization also influences the amount and duration of attention that advertisements receive. The study investigated how personalized banner advertisements receive consumers' visual attention using an eye-tracking psychophysiological experimental method (Bang & Wojdyski 2016). In the study, participants were instructed to navigate a webpage containing an article along with a solitary banner advertisement. Within the cohort, subsets were exposed to highly personalized advertisements, while others encountered non-personalized counterparts. The analysis revealed that personalized advertisements elicited heightened visual attention and prolonged engagement relative to their non-personalized counterparts. This finding underscores the potency of personalization as a strategy for capturing the interest of internet users, rendering personalized ads more effective tools for advertisers seeking to attract attention within the online realm.

Kim, Kang, Choi and Sung (2016) sought to comprehend personalization concerning advertisement effectiveness in the context of Facebook. The researchers undertook a comprehensive online survey aimed at uncovering the various factors that motivate individuals to click on Facebook advertisements. Through this survey, they sought to gain deeper insights into the underlying determinants driving user engagement with ads on the Facebook

platform. According to the findings, Facebook users find advertisements more appealing if they are related to their interests and are more informative than annoying (Kim, Kang, Choi & Sung 2016). This observation highlights the correlation between user click motivations and their individual interests. Given the inherent diversity in interests and values among individuals, customizing advertisements to suit the specific preferences of each consumer becomes imperative for achieving success. Consequently, it can be inferred that Facebook ads tailored to align with users' values and interests are inherently more effective in eliciting user engagement and achieving desired outcomes.

Furthermore, researchers unearthed the advantages of personalized posts on a company's Facebook page. Hatzithomas, Fotiadis, and Coudounaris (2016) conducted a comprehensive international study scrutinizing the Facebook posts of Vodafone, a prominent telecommunications company, across the United Kingdom and Greece. Their investigation delved into the impact of non-personalized versus personalized creative strategies employed in the company's Facebook posts on consumer perceptions of its advertising. Through qualitative content analysis and in-depth interviews, they revealed that personalized executions of social media posts emerged as the most effective strategy. (Hatzithomas, Fotiadis & Coudounaris 2016). People said they became more familiar with the brand and had a better opinion of the company when the posts became more personal. This demonstrates the positive impact that personalization can have on people's perceptions of a product or brand.

In another study, researchers discovered that older generations perceive personalized advertisements differently than younger generations (Ünal, Ercis & Keser 2011). Researchers found that more youthful audiences, ages 18-24, are more likely to accept personalized advertisements than older audiences, ages 25 and older, using a survey as their method. They also discovered that younger audiences are more receptive to personalized mobile advertisements and consider them more than older adults when purchasing. This data assists advertisers in determining which platform to serve personalized advertisements on based on the age demographic they intend to target.

Furthermore, this evidence shows that personalized advertisements generally elicit more positive reactions in younger audiences than in older ones and that personalized content served on a mobile platform is more appealing to younger consumers.

An examination of the literature on personalization in advertising reveals that personalized advertising is typically a more effective advertising strategy than non-personalized advertising, and advertisers should use this information to develop marketing that will reach their target audiences more effectively.

Evens and Damme (2016) proposed a link between personal data control and willingness to share information. Personalization benefits are expected to influence the intention to disclose personal information positively (Wang et al. 2016). Personalized advertising provides advantages by sending users relevant information or services based on their activity history and preferences (Wang et al. 2016). These advertisements are created using user data (Wang et al. 2016). and planned to send the offers to consumers at the appropriate time. Receiving relevant information is a critical advantage in persuading customers to exchange their personal data for personalized advertising (Zhu et al. 2017).

As previously stated, personalized advertising is tailored to consumers' activity history, needs, and interests (Wang et al. 2016; Chen et al. 2018). As a result, it may encourage consumers to provide personal information in exchange for access to personalized ads (Chen et al. 2018).

Other studies have mentioned personalization as a benefit (Wang et al. 2016; Chen et al. 2018). The study defines customers' perceived benefits as advantages gained from receiving pertinent information, accessing suitable products/services at the right time, and facilitating time-saving. This encompasses Wang et al. (2016) and Chen et al. (2018) findings, emphasizing the value consumers attribute to personalized experiences driven by tailored information and timely offerings.

To summarize, personalization is based on the disclosure of information (Wang et al. 2016). Individuals are likely to relinquish privacy in exchange for potential personalization benefits (Wang et al. 2016; Chen et al. 2018). Benefits are expected to positively correlate with intention and provide direction by motivating users to engage in the targeted advertisement (Wang et al. 2016; Chen et al. 2018).

According to early research studies conducted on the internet or digital environments, personalization improves advertising effectiveness. Some studies have found that personalized advertising messages are more memorable and likable than non-personalized advertising messages, and that they can also cause behavioral change. For example, a personalized direct

marketing message results in a higher advertising response rate. The researcher demonstrated that participants who received personalized messages were more likely to install energy-efficient roofs than participants in a control group. But what exactly is a personalized message? Many researchers have investigated the underlying mechanism of personalization effects. Many mediators for positive personalization effects, such as self-referential thinking, perceived uniqueness, and feelings of accomplishment, have been proposed and tested. Many scholars reviewed all the previously studied mediators.

5. DISCUSSION

Many scholars reviewed all of the previously studied mediators and concluded that increased personal relevance is the primary mediator of positive personalization effects. Users are more likely to perceive a personalized message as more self-relevant because it uses information about them. The degree to which a user relates information to themselves is referred to as relevance or self-referencing. According to research, when users bond advertising messages to themselves, their attitudes improve. When those messages are perceived as personally relevant to them due to personalization, users pay more attention, elaboration, and message processing, eventually becoming persuaded by the messages. Users, on the other hand, are irritated by intrusive, irrelevant advertising messages. Advertising personalization on Facebook is powered by machine learning artificial intelligence in two primary ways: click prediction system and ad integrity. The click prediction system predicts which advertisements users will likely click on based on their perceived relevance and interests.

On the contrary, the integrity of advertisements plays a pivotal role in determining the optimal presentation and user experience for individual users. In a machine learning-powered environment such as Facebook, personalization is exceptionally detailed. Leveraging a click prediction system and ads integrity, Facebook aims not only to craft highly personalized advertising messages but also to facilitate highly personalized advertising interactions.

Advertising interactivity is critical for effective user communication. However, to maintain users' interest and involvement with advertisements, good advertising interaction requires relevant, personalized advertising content that contains essential information and the users' current needs (Chap 2022).

According to Parra-Arnau et al. (2017), "advertisers can reach their audience through contextual and semantic advertising by directing ads related to the content of the Web site where they are to be displayed" (6-7). Contextual targeting uses keywords to create themes based on factors such as language, recent browsing history, and location. (Verma & Yadav, 2021).

Relevant findings have also been obtained from research testing the effectiveness of personalization in digital advertising via mobile use. Kim and Han (2014) investigated the factors influencing purchase intent when consumers viewed smartphone advertisements. Participants were asked to fill out a survey and respond to questions on a five-point Likert scale. Researchers discovered that compared to non-personalized advertisements, participants perceived personalized advertisements as more informative and credible. However, the findings also revealed that some participants found personalized advertisements to be bothersome and unwanted (Kim & Han 2014). In this case, the individual's annoyance likely hindered their ability to fully engage with the advertisement. This highlights the delicate balance between personalized advertisements being perceived as beneficial or annoying by consumers. Advertisers must discern the appropriate level of personalization to employ to ensure optimal effectiveness without causing irritation to their target audience.

According to Jung (2017), personally relevant advertisements may entice a consumer to pay more attention to the advertisement. However, the findings also revealed that consumers concerned about their information collected by advertisers are likely to avoid social media advertisements entirely. This demonstrates that personalization can be beneficial, but advertisers should consider consumer skepticism because it may cause users to bypass certain advertisements entirely. Advertisements must be personalized, but not so much that consumers become suspicious.

This demonstrates that there is a fine line between personalized advertisements being beneficial or annoying to consumers, and advertisers must understand the appropriate level of personalization to use.

Overall, research findings unveil a dichotomy concerning personalization's efficacy, with evidence pointing towards its utility as a valuable tool for advertisers alongside indications of its negative repercussions. This insight is instrumental for advertisers as it emphasizes the necessity of navigating a fine line between

successful advertising and potential intrusiveness.

Existing literature indicates that the concept of relevance is where this problem intersects. Evidence also suggests that when consumers have control over how much personal information advertisers can access, they are more comfortable with being served personalized advertisements based on this information. This evidence suggests that the best way to create personalized advertising is to balance various factors. There is a need to find a "sweet spot" when it comes to personalized advertisements, or this strategic technique may do more harm than good.

Understanding people's attitudes and intentions allows researchers to follow consumers' decision-making processes for a specific behavior (Ajzen 2015). Individuals have expressed privacy concerns about collecting and using information from online users (Buck et al. 2017; Dinev et al. 2013).

Consumer attitudes and intentions have been the subject of extensive research across various studies aimed at gaining deeper insights into the outcomes of online information utilization. These investigations encompass a wide array of topics, including online advertising, mobile marketing, consumer decision-making in e-commerce, online interaction, and purchasing behavior (Tucker et al. 2014). Previous research has revealed a paradox in the relationship between personalization in online marketing and information privacy (Aguirre et al. 2015).

Because personalized advertisements have been used in email, direct mail, telemarketing, and text messages for longer than search engine and social media advertising, it is helpful to examine their effectiveness. A study was conducted by Morimoto (2021) to investigate why some people avoid these types of personalized advertisements. College students were randomly assigned to one of four study media, which included email, direct mail, telemarketing, and text message advertisements, and were asked to complete an online survey. According to survey results, respondents "perceive their personal information as threatened, [become] annoyed and distrustful of persuasive efforts, and thus [avoid] such messages" (Morimoto 2021, 71).

This suggests that some people are more concerned about their personal information being compromised than they are about receiving an advertisement in the first place. When exposed to a personalized advertisement, certain consumers might divert their attention away from the advertisement's content, instead becoming more cognizant of the

fact that their personal information is accessible to others. This demonstrates that people will only allow advertisements to intrude on their personal lives to a limited extent, and that people are concerned about others having access to their personal information. The findings of this study are related to recent events involving personal data, such as the Facebook-related Cambridge Analytica scandal.

A study by Lin and Kim (2016) adds to the body of knowledge about consumer privacy concerns. This suggests that some people are more concerned about their personal information being compromised than they are about receiving an advertisement in the first place. When served a personalized ad, some consumers may focus on something other than the advertisement's content and may be more aware that someone has access to their personal information. This illustrates that individuals are willing to tolerate a certain level of intrusion from advertisements into their personal lives, but only to a limited extent, reflecting concerns about unauthorized access to their personal information. The implications of this study are particularly relevant in light of recent events surrounding personal data, such as the Cambridge Analytica scandal involving Facebook.

Zhu et al. (2016) used an online survey to test the intersection of relevance and privacy concern directly and discovered that personalized advertisements that are more relevant to consumers are less likely to cause privacy concern. As a result, consumers are less likely to be concerned about using their information if the advertisement is genuinely relevant to them, matters to them, assists them in achieving a goal, or aligns with their interests. This finding is critical for advertising professionals, and more research should be conducted into how to make advertisements appear relevant to consumers.

The degree of control individual consumers possess over their online privacy serves as a crucial factor influencing the effectiveness of personalization in advertising. Tucker et al. (2014) delved into how the perception of information control impacts the likelihood of clicking on an online advertisement within a social networking site. This investigation leveraged an experiment conducted by a non-profit organization that optimized its Facebook campaigns for internet users and randomly varied the ad copy's explicit personalization based on user profile data (Tucker et al. 2014, 547). Midway through the experiment, participants were granted increased control over their listed information on Facebook through a privacy control interface, offering users new controls over their data usage (Tucker et al. 2014). This change

stemmed from a genuine privacy policy adjustment implemented by Facebook during the study period. Surprisingly, the data revealed that when individuals perceived they had control over their information, they demonstrated a greater inclination to click on personalized advertisements (Tucker et al. 2014). This discovery underscores the delicate balance between personalization and intrusion, highlighting the profound implications for advertising strategies.

When users perceive themselves as having greater control over their information, they exhibit a higher propensity to engage with tailored advertisements. This is attributed to their implicit consent to being targeted, as they feel empowered in the decision-making process. The notion of control, both actual and perceived, manifests prominently in this scenario. By possessing a degree of control and being cognizant of it, consumers experience a heightened sense of comfort when interacting with advertisements, thereby fostering increased engagement.

This evidence holds significance as it underscores the importance of consumers voluntarily providing their information. When consumers are content with advertisers targeting them based on the extent of information they choose to disclose, it highlights the value of consumer control in personalized advertising. These studies underscore the significance of empowering consumers to regulate the release of their information and its direct correlation to the effectiveness of personalized advertisements.

In recent years, social media websites and apps such as Facebook, Instagram, and Twitter have added advertising space. These spaces are mainly used to display personalized advertisements.

The ad space provides advertisements based on the user's interaction with the social media platform (Lambrecht & Tucker 2013; Okazaki & Taylor 2013). Advertisers have the capability to gather user data encompassing activities like likes, comments, searches, and other online interactions (Lambrecht & Tucker 2013). While personalized online marketing poses both threats to consumers' personal information and enhances marketing efficiency, its regulation has become increasingly challenging. Consequently, user awareness regarding personal data privacy and associated risks has escalated (Deuker 2009; Ham 2017; Vemou et al. 2014), leading to ongoing scrutiny of data usage practices (Aguirre et al. 2016; Kokolakis 2017; Jung 2017). Given that individuals are driven to mitigate risks, failures, and losses in online interactions, perceived risk plays a pivotal role in elucidating consumer behavior in the online realm (Zheng 2021).

This perception influences various aspects of behavior, including decision-making, evaluation, and response to online marketing messages (Zheng 2017).

Imsa (2020) explained several factors that cause users to avoid online advertising in their journal. The first factor is that the internet is still regarded as a tool for users to complete their work and is not intended for entertainment. Online advertisements are considered extremely irritating when internet users only have a limited amount of time to complete their tasks and work.

The second factor influencing user behavior is the speed of data and internet accessibility. Internet users prioritize fast data access, and the presence of online advertisements is perceived to potentially slow down data access, akin to downloading files. In summary, the incorporation of advertising space on prominent social media platforms has catalyzed the emergence of personalized online marketing, harnessing user data to augment marketing efficacy. However, this approach has raised apprehensions regarding the privacy of personal information, prompting heightened awareness among users.

6. CONCLUSION

The collection of data for personalized advertising has become a double-edged sword, posing both a threat to consumers' privacy and a means to improve marketing strategies. As users become more conscious of the risks associated with data use, perceived risk emerges as a crucial factor influencing various aspects of online behavior, including decision-making and response to marketing messages.

In conclusion, this study provides insights into the impact of targeted advertising on the privacy rights of Egyptian youth. However, there are several avenues for future research that can enhance our understanding of this complex relationship. Longitudinal studies would be valuable to track the sustained effects of targeted advertising over time. Additionally, conducting comparative analyses across diverse demographic groups within Egypt could uncover nuanced variations in responses. Cross-cultural investigations comparing the experiences of Egyptian youth with those in other countries would provide a broader perspective. Exploring the effectiveness of legal and ethical frameworks, investigating educational initiatives, assessing technological solutions, examining corporate responsibility, evaluating public policy implications, and exploring user-centric design approaches are all areas that warrant further investigation. Lastly, delving into

the psychological impact of targeted advertising on Egyptian youth could uncover additional dimensions that influence online behaviors and decision-making. These recommendations collectively guide future

research endeavors, ensuring a comprehensive exploration of the evolving dynamics between targeted advertisements and the privacy rights of Egyptian youth.

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