

# A Systematic Literature Review of Factors Affecting Online Behavioural Advertising

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**Abstract** - This study aimed to summarize and identify factors affecting online behavioural advertising identified until 2024, and to create an integrated conceptual framework that explains relationships between these factors affecting OBA. Even though a significant number of recent studies have been published on online behavioural advertising during recent years, systematic reviews about online behavioural advertising is limited, which is the focus of this study. The study utilized the systematic review method to organize publications gathered from Scopus database, Emerald Insight and Google Scholar. Thematic analysis was used to identify and according to themes. Review of 46 publications revealed that, advertiser-controlled factors are the initial predictors of user-controlled factors, leading to OBA outcomes. By reviewing 46 publications it was revealed that, advertiser-controlled factors such as: ad-skip option, time display, content quality and source attractiveness affect user-controlled factors. User controlled factors that are highly prevalent in the existing literature are: privacy concerns, ad-scepticism, ad-relevance and user attitude. The impact from advertiser-controlled factors to user-controlled factors are moderated by social and cultural factors and personality traits. The final outcomes of OBA depend on each platform, context and group of users. As identified in the literature OBA outcomes are, OBA acceptance, OBA avoidance, ad-blocker use, purchase intentions and brand engagement. Influence from user-controlled factors to OBA outcomes is moderated by gender, trust and psychological ownership. This systematic review is unique because recent knowledge on personalised advertising is reviewed here through empirical findings, while providing an idea of the broader picture for advertising practitioners.

**Keywords:** Online Behavioural Advertising, Personalised Advertising, Privacy Concerns

## I. INTRODUCTION

Technological advancements and social media driven rapid globalization, has created an abundance of consumer data, available for advertisers to utilize in their targeted advertising strategies. With integrated social media platforms and technological advancements in artificial intelligence, online behavioural advertising (OBA) has given advertisers the means to deliver advertisements to users, specifically tailored according to behaviour of each user profile, the concept of delivering advertisements by analysing the online behaviour of each user is identified as OBA. This practice emerged, as a targeted advertising practice that gather user information to make advertising more relevant to individuals according to their search history, online purchasing behaviour, geography, life interests and preferences. Furthermore, the advertising practice that, advertisers monitor internet users' online behaviour and use gathered information to deliver individually targeted advertisements is defined as OBA by (Boerman et al., 2017) and OBA has become the most effective online advertising practice of the modern advertising industry, with its advantages.

OBA has its advantages and disadvantages, and advantages as, seeking personal relevance to users (Boerman et al., 2017), positively approached by persons who are prepared to exchange information and who have fewer privacy concerns (Grau & Zotos,

2016; Lee et al., 2015), consumers' acceptance to ads that are relevant to them and being much more effective for advertising companies than non-targeted ads due to its ability to increase click-through rates and purchases (Chen & Stallaert, 2014).

However, as per disadvantages of OBA, privacy concerns have become a major factor since OBA is using "click stream data" as their main data source. Click stream data is "the electronic record of Internet usage collected by Web servers or third-party services" (Guo & Sismeiro, 2020). Privacy concerns, sceptical advertisements and other disadvantages such as intrusiveness, lack of control of OBA can lead users towards avoidance behaviours. Generally advertising avoidance can be defined as all actions that reduce users' exposure to ad content, further emphasised as, "All actions by media users that differentially reduce their exposure to ad content is considered advertising avoidance" by (Speck & Elliott, 1997). OBA avoidance is reducing the usefulness of OBA as an advertising strategy and has driven the need to identify reasons behind users' behaviour to avoid advertisements that are tailored to each individual user's online behaviour.

This has led researchers to investigate different aspects behind user tendency to avoid OBA in different media platforms, and empirically test the phenomenon using different conceptual models in various socio-cultural atmospheres around the world. This wide variety of findings generated during the recent years, present a vague picture on OBA with different definitions and different views on the same fundamental concept. A systematic review of OBA is necessary to bring these findings together and present a generalizable framework.

Even though OBA has been empirically tested in different context a systematic literature review providing a conceptual framework for factors affecting OBA has not been conducted since Boerman et al. (2017). This study differs from existing literature with its objective to conduct a systematic literature review of factors affecting OBA and provide a conceptual framework incorporating the recent findings after 2018 regarding OBA in different contexts to provide insight into a more generalized understanding of OBA. Next sections of the paper will focus on literature review, methodology, results and discussion, and conclusion.

## **II. METHODOLOGY**

The systematic review was conducted using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines.

### ***A. Search Strategy***

A systematic search was conducted on the databases, Emerald, Scopus, Sage Journals, Wiley, and additional publications were searched on Google Scholar. The keywords, online behavioural advertising, personalised advertising and targeted advertising were used for the search, and the search led to identify 135 publications initially.

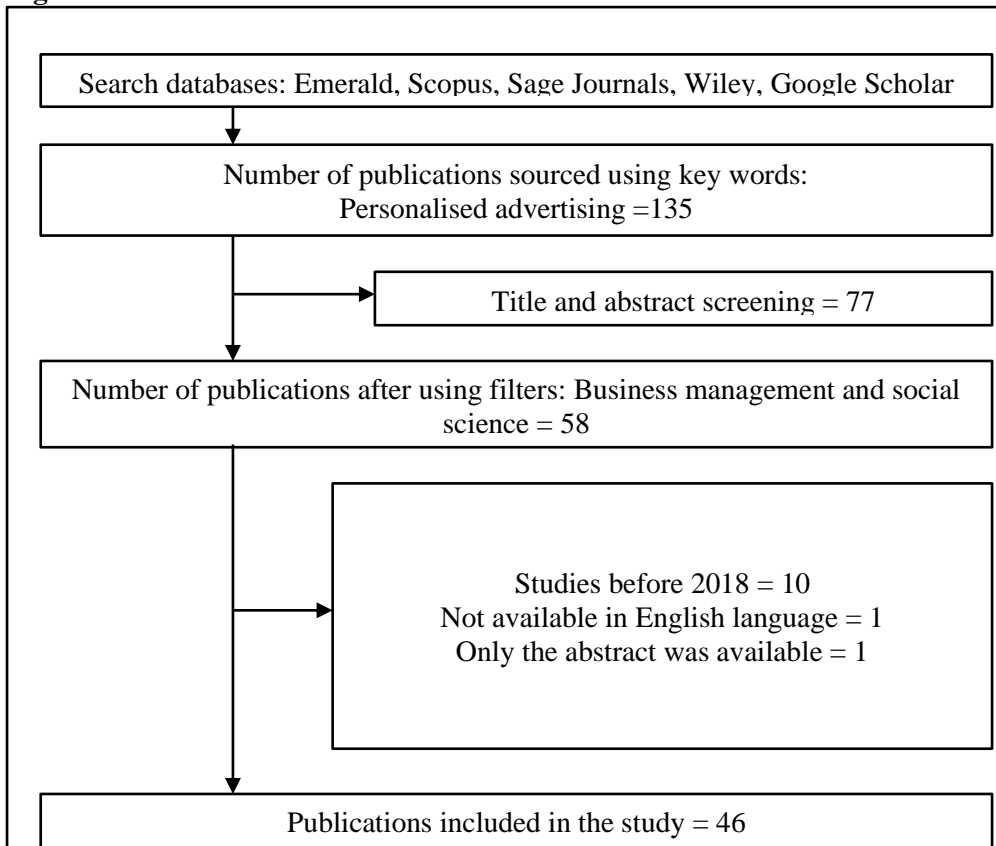
### ***B. Inclusion and Exclusion Criteria***

Of the initially selected 135 publications, through screening the title and abstract 77 were removed since those publications did not fit in the subject areas of business management or social sciences. From the remaining 58 publications, 10 publications were excluded since those publications were before 2018 and 1 publication was excluded due to full text not being available and 1 publication was excluded due to not being available in English. After these exclusions, 46 articles were included in the systematic literature review for the full-text review and thematic analysis to identify factors affecting OBA. The literature

search diagram below explains the literature review process step by step with each inclusion and exclusion at each step.

A thematic analysis was conducted to identify themes and patterns of factors affecting OBA from the selected 46 publications and, identified themes were represented in an integrated conceptual framework to visualise theoretical, and empirically tested relationships behind identified factors. Next section explains thematic analysis process in detail.

**Figure 1. Literature Search**



Source: Authors' compilation.

### ***C. Thematic Analysis***

Thematic analysis is a method of identifying and reporting patterns in data. A theme captures something important to solve research questions, and the size of a theme depends on its prevalence in data (Braun & Clarke, 2006). This study utilized inductive approach for thematic analysis to identify themes through factors affecting OBA that are empirically tested and reviewed in selected 46 publications. First empirical studies were read carefully to familiarise with factors affecting OBA at each case. Secondly themes were searched and identified depending on definition of the factor, hypothesized relationship of the factor and empirical results of the tests.

Thematic analysis revealed six major themes as, 1) advertiser-controlled factors, 2) user-controlled factors 3) social and cultural factors 4) personality traits and 5) OBA outcomes and 6) Other moderators (gender, trust, psychological ownership). As per the

results identified in the thematic analysis next section includes factors identified with their respective themes, theories empirically tested, and the conceptual framework.

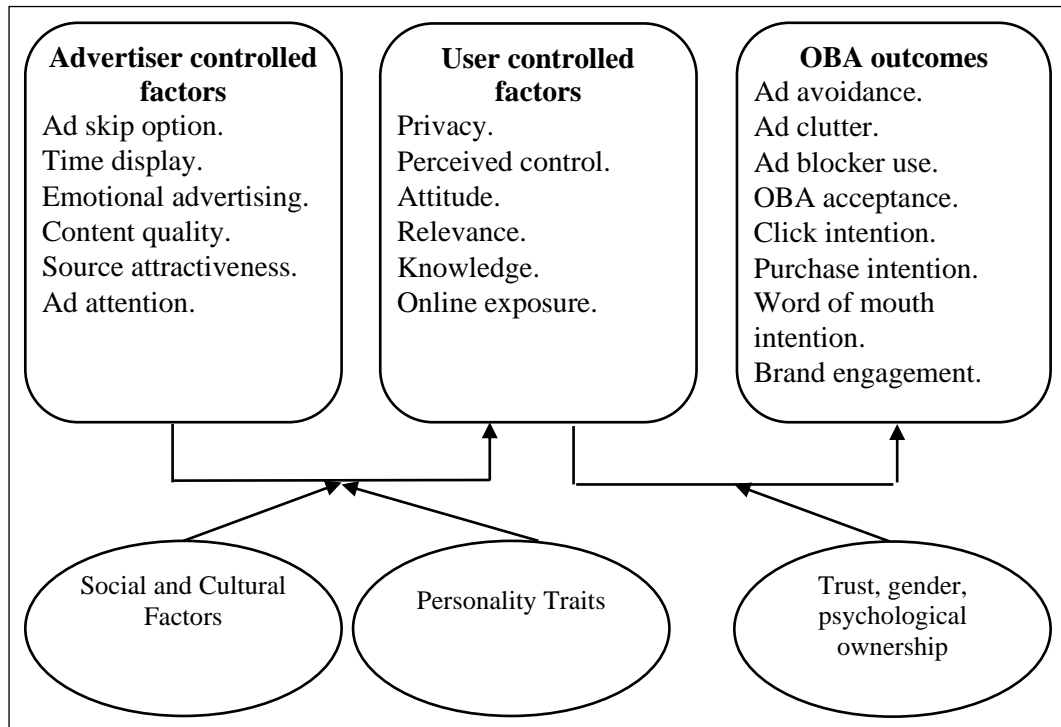
### III. RESULTS AND DISCUSSION

Review of past literature proves that OBA is influenced by factors that are under different aspects of OBA. Firstly, advertiser-controlled factors initiating the process, mediated by social and cultural factors and user’s personality traits, leading to user’s perceptions or user-controlled factors, moderated by moderators such as gender, trust and psychological ownership resulting in positive or negative OBA outcomes. This section of the literature review focus on these aspects one by one.

#### A. Conceptual Framework

Following conceptual framework explains the relationships as tested and proved in the past literature.

**Figure 4. Conceptual Framework**



Source: Authors’ compilation.

#### B. Themes and Codes Table

Following table explains the factors affecting OBA with their respective themes.

**Table 4. Advertiser Controlled Factors**

Factor	Source	Theme
Ad skip option	(Choi and Kim, 2022)	Advertiser controlled factors
Time display		
Emotional advertising	(Siani et al., 2021)	

Ad content quality	(Li and Yin, 2021)	
Source attractiveness	(Lin et al., 2021)	
Ad attention	(Jung and Heo, 2021)	
Extroversion		
Openness to experience	(Amaranath and Jaidev, 2023)	User Personality traits: Mediator
Agreeableness		
Conscientiousness		
Reactance to arousal		
Self-disclosure willingness	(Rózsa et al., 2024)	
Social commerce constructs: Referrals, reviews, ratings.	(Ali et al., 2020)	
Cultural Factors: Uncertainty avoidance, Power distance, Masculinity	(Abuhashesh et al., 2021)	Social and cultural Factors: Mediator
Social Influence	(Niu et al., 2021)	
Parental concerns regarding teenagers and children	(Holvoet et al., 2021)	

Source: Authors' compilation.

**Table 5. User Controlled Factors**

Factor	Source	Theme
Privacy concerns	(Brinson and Britt, 2021), (Jain and Purohit, 2022), (Udadeniya et al., 2019), (Wijenayake and Pathirana, 2019),	User perceptions of privacy
Privacy attitude	(Sahli and Zhai, 2024)	
Privacy protection behaviour	(Choi and Kim, 2022)	
Perceived risks	(Ciuchita et al., 2023), (Jain and Purohit, 2022), (Ali et al., 2020), (Sahli and Zhai, 2024)	
Privacy cynicism	(Segijn and van Ooijen, 2020)	
Perceived surveillance	(Segijn and van Ooijen, 2020)	
Perceived freedom threat	(Hu and Wise, 2021)	User perceptions of perceived control
Perceived control	(Choi and Kim, 2022), (Hu and Wise, 2021), (Li and Yin, 2021), (Yin et al., 2023)	
Perceived benefits	(Hu and Wise, 2021), (Ratten, 2015)	Perceptions of relevance and benefits
Perceived personalization	(Udadeniya et al., 2019), (Wijenayake and Pathirana, 2019)	

Source attractiveness	(Lin et al., 2021)	
Ad relevance	(Brinson and Britt, 2021), (Ciuchita et al., 2023), (Kim and Huh, 2017)	
Attitude towards Personalised advertising	(Brinson and Britt, 2021), (Choi and Kim, 2022), (Ciuchita et al., 2023), (Yin et al., 2023), (Daems et al., 2019), (Rózsa et al., 2024)	User Attitude
Attitude towards the retailer	(Ciuchita et al., 2023)	
Brand attitude	(Hu and Wise, 2021), (Yin et al., 2023), (Segijn and van Ooijen, 2020)	
Perceptions on AI	(Ciuchita et al., 2023)	
Ad scepticism	(Brinson and Britt, 2021), (Udadeniya et al., 2019), (Amaranath and Jaidev, 2023)	Negative user perceptions
Ad irritation	(Brinson and Britt, 2021), (Choi and Kim, 2022), (Lin et al., 2021), (Niu et al., 2021), (Amaranath and Jaidev, 2023),	
Ad intrusiveness	(Choi and Kim, 2022), (Li and Yin, 2021), (Yin et al., 2023), (Sahli and Zhai, 2024)	
Goal impediment	(Udadeniya et al., 2019), (Wijenayake and Pathirana, 2019)	
Advertising invasiveness: space invasiveness, attention invasiveness	(Niu et al., 2021)	
Resistance to mobile advertising	(Sahli and Zhai, 2024)	
Persuasion knowledge	(Jain and Purohit, 2022)	User knowledge and capability
Flow experience	(Mo et al., 2023)	
Ad blocker use	(Brinson and Britt, 2021)	

Source: Authors' compilation.

**Table 6. OBA Outcomes and Moderators**

Factor	Source	Theme
Ad avoidance	(Brinson and Britt, 2021), (Li and Yin, 2021), (Niu et al., 2021), (Udadeniya et al., 2019), (Amaranath and Jaidev, 2023),	Outcomes of OBA

OBA acceptance	(Aiolfi et al., 2021)	
Click intention	(Aiolfi et al., 2021), (Jung and Heo, 2021)	
Purchase intentions	(Siani et al., 2021), (Sharma et al., 2022), (Ali et al., 2020)	
Word of mouth intention	(Daems et al., 2019)	
Consumer brand engagement	(Tran et al., 2020)	
Ad clutter	(Jung and Heo, 2021)	
Trust	(Bleier and Eisenbeiss, 2015), (Brinson and Britt, 2021), (Ali et al., 2020)	
Gender	(Abuhashesh et al., 2021)	Moderators
Psychological ownership	(Niu et al., 2021)	
Social isolation	(Rózsa et al., 2024)	

Source: Authors' compilation.

Next section of the paper discusses factors affecting OBA with their definitions and theoretical background.

### **C. Discussion**

This section critically reviews and discusses the definitions of factors affecting OBA, with their empirical findings as hypothesized and tested.

**1) Advertiser Controlled Factors:** Advertiser controlled factors depend on the advertising strategies used by advertisers and these factors are significant predictors of OBA outcomes. This section includes and discusses advertiser-controlled factors with empirically tested findings.

A common way to attenuate the negative consequences of online video ad intrusiveness is the ad skip option, which allows users to skip an ad and return to primary video content after a certain amount of time. Ad time display is another common digital ad feature that helps viewers endure forced exposure to in-stream video ads (Choi & Kim, 2022). Ad-skip option, time display are features of an advertisement that determines the control given to users, thus directly influencing perceived control as found by (Choi & Kim, 2022).

Emotional appeals in advertising are a strategy that moves an individual's emotions, feelings and human nature (Lin et al., 2021). Emotional advertising which is also another advertiser controlled factor that has shown a significant impact on purchase intention of sports product according to Siani et al. (2021) leaving us with the conclusion that emotional advertising appears to be more appealing for products that highly depend on the individuals likes and dislikes identified through personalised advertising.

Another advertiser-controlled factor: ad-content quality is depending on an individual's evaluation of an advertised content meeting their expectations (Chandrasekaran et al., 2019). According to Li and Yin (2021) advertising content quality moderated the impact of perceived control on advertising avoidance.

Source attractiveness, another advertiser-controlled factor, can be defined as the level of attraction the user have to the medium of that the personalised advertisement is appearing on, for an example it can be the YouTube video that has personalised ads for viewers. According to Lin et al. (2021) source attractiveness increased ad-irritation in the context of YouTube skippable ads, and failed to mitigate the effect of ad-avoidance, the negative experience of goal impediment faced by users due to personalised advertisements in YouTube can be the reason behind this.

However, the attention an advertisement receives from a viewer is defined as ad-attention. It was revealed that users tend to care for advertisements that are not intrusive and blends with the content advertised leading to positive outcomes as, OBA acceptance as found by (Jung & Heo, 2021).

As evident from the above information, Advertiser-controlled factors predict user-controlled aspects and moderates the relationships between user-controlled aspects and OBA outcomes. Next section of the literature review focuses on social and cultural factors.

**2) Social and Cultural Factors:** Social and cultural factors act as moderators to the relationship between advertiser-controlled factors user-controlled factors. This section discusses social and cultural factors such as, social commerce, social influence and parental responsibility regarding OBA.

Social influence is the influence to accept information obtained from another as evidence about reality and social influence depends on the privacy concerns of users. The study by Niu et al. (2021) revealed that social influence has a negative effect on attention invasiveness and space invasiveness in social media advertising moderated by psychological ownership in the Chinese context. Here attention invasiveness and space invasiveness are both user-controlled factors that influence ad-irritation that leads to OBA avoidance.

Popular ideas in society are represented by social commerce factors are referrals, review and ratings in social media platforms. Social commerce factors were found to influence trust, perceived risk and purchase intentions in the study by (Ali et al., 2020). In the context of Facebook advertising an empirical study by Abuhashesh et al. (2021) revealed that, cultural factors: uncertainty avoidance, power distance and masculinity have a significant impact on consumer attitude towards Facebook advertising.

When looking at social structure's family is considered the most important structure. Holvoet et al. (2021) conducted a qualitative study to investigate parental responsibility on online data protection of teenage kids. This study revealed that parents are highly concerned about their children's exposure to personalised advertising and online data collection, and view it is as their responsibility to and responsibility of internet organizations to protect the young generation. However, from the teenage perspective Rózsa et al. (2024) revealed that Generation Z's self-disclosure willingness on social media is significantly influenced by attitudes toward advertising, group influence and social isolation. Furthermore, how generation gap leads to different perceptions on OBA was investigated by this study, leading to the conclusion that positive attitudes towards advertising and high susceptibility from reference groups increase the probability of personal information disclosure in Generation Z users.

This empirical evidence reveals that, social norms, beliefs about advertising highly influence how users think which determines their judgement to accept or avoid OBA, moreover parental concerns on their child's exposure to OBA has been given little



attention by the highly competitive advertising industry. Next section focuses on user's personality traits that affect OBA outcomes directly and indirectly.

**3) User's Personality Traits:** Studies on personality characteristics and consumer behaviour are rare (Amaranath & Jaidev, 2023). Personality traits explain reasons behind individual choices and in the context of OBA, and specific subjective concerns leads to OBA outcomes. This requires an understanding of the role of personality traits in OBA. Above study Amaranath and Jaidev (2023) tested elemental traits, extroversion, openness to experience, agreeableness, conscientiousness, neuroticism on their impact on ad-irritation, ad-scepticism leading to OBA avoidance. When looking at definition of these personality traits, according to Mowen (2000) extroversion is a tendency towards timidity or nervousness. Openness to experience is associated with tolerance, and appreciation for new ideas and experiences Kabigting et al. (2021) and agreeableness is the strong interpersonal orientation which leads to willingness to interact within groups by pursuing group harmony (Lun & Bond, 2006; Westjohn et al., 2012). Individuals who are with higher conscientiousness tend to be careful, organized, and more concerned about achievements (Jani and Han, 2014).

Amaranath and Jaidev (2023) revealed that, extroversion, openness to experience, agreeableness and conscientiousness had a significant positive impact on general self-efficacy which had a significant negative impact on OBA avoidance, through ad-irritation and ad-scepticism. Leaving with the conclusion that personality traits are behind user behaviour regarding personalised advertisements and next section forces on user-controlled factors affecting OBA.

**4) User Controlled Factors:** Past literature on OBA revealed many user-controlled factors that has been tested in various contexts. These factors were categorized into six sub-components as, privacy, perceived control, attitude, positive user perceptions, negative user perceptions, knowledge and online exposure.

**5) Privacy:** The data-driven personalised advertising has given advertisers the ability to extract, collect, store and analyse consumer data and plan their advertising strategies. However, the most critical challenge of this practice has been dealing with consumer data privacy. Definitions of information privacy range from: "the right to be left alone" as defined by (Warren & Brandeis, 1890), to "individuals' right and ability to have control over the flow of information about them" (Nissenbaum, 2009).

Since privacy concerns has been empirically tested and proved as a predictor of OBA avoidance in many recent studies on personalised advertising and OBA, it is one of the essential pre dictors of OBA avoidance (Brinson & Britt, 2021; Dienlin & Trepte, 2015; Ham, 2016; Jain & Purohit, 2022; Kim & Huh, 2017; Li & Huang, 2016; Nyheim et al., 2015; Ratten, 2015; Udadeniya et al., 2019; Wijenayake & Pathirana, 2019).

Privacy has been a widely discussed issue with OBA practices such as synced advertising where consumer data one platform is used to send personalised advertisements from another platform, making consumer data available for advertisers across media (Segijn et al., 2024). Privacy paradox is another discussed issue regarding where online privacy concerns do not sufficiently explain online privacy behaviours on social network sites, because even though users are concerned about the privacy of their data, still their data is being exposed due to their necessity to use the platform that extract their data continuously. Dienlin and Trepte (2015) conducted an empirical study on this

matter incorporating variables privacy attitude, privacy intention, and privacy cynicism as predictors of privacy protection behaviour. Privacy intentions are the level of privacy a user is intending to expose to social media, privacy attitude is whether the user is positive or negative about exposing data to social media, privacy behaviour are actions taken regarding online privacy protection. This study concluded that still privacy paradox exists in online users, empirically confirming that privacy concerns lead to privacy attitude which in turn leads to privacy intention and privacy behaviour.

With the highly synchronized media platforms that gives little to no control over their data to users have led users to feel hopeless in privacy protection behaviour, making users to be cynical on the overwhelming surveillance leading to negative brand attitudes (Segijn & Van Ooijen, 2022).

In summary privacy concern is a widely discussed and a very critical aspect of personalised advertising which is a major antecedent of OBA avoidance. With the highly competitive state of social media and online advertising industry, privacy concerns have been neglected leading to issues such as privacy paradox and privacy cynicism.

**6) Perceived Control:** Perceived control can be defined as the level of control a person has over an environment, an object or a situation. Advertisements that interrupt viewers goal without giving any knowledge on the duration or option to skip are perceived as threats for their online freedom by viewers due to lack of perceived control, and as a response for this threat they develop a reaction of avoidance. This reactance initially generates negative emotions towards the advertisement and later evolve into negative attitude towards the advertised brand (Choi & Kim, 2022).

As found by Choi and Kim (2022) advertisements with skip option and ad time duration display reduces ad irritation and intrusiveness of advertisements. Intrusiveness is the perception that an ad has interrupted an ongoing cognitive process (Li et al., 2002), and irritation is a negative outcome from ad intrusiveness.

Similar findings are also evident in two Chinese studies on skippable advertisements by Li and Yin (2021) and Yin et al. (2023) as: perceived control positively affected brand attitude and negatively affected advertising avoidance intention. An experimental study with similar objectives in the United States context showed that, increased consumers' perceived control, led to more positive attitudes toward the advertised products and reduced perceived threat of freedom to advertising messages (Hu & Wise, 2021).

**7) Attitude:** Consumer attitudes lead to OBA outcomes since it is a user-controlled factor. Past studies have investigated user attitudes in different contexts, of personalised advertising. As per Brinson and Britt (2021) attitude towards personalised advertising are complex than attitudes towards advertising in general. With new OBA techniques, advertisers are using artificial intelligence to target users online with personalised advertisements. However, surprisingly Ciuchita et al. (2023) found that consumer attitudes towards AI is positive and disclosed use of AI for personalised advertising does not significantly influence attitudes towards personalised advertising.

Advertising attitude as a user-controlled factor that is influenced by advertiser-controlled factors. According to Yin et al. (2023) perceived control positively affected brand attitude in the context of skippable video ads. Attitudes can differ between generation groups and as per Rózsa et al. (2024) attitude towards advertising of generation

Z influences their willingness to disclose personal information to the public using social media, thus reducing privacy concerns.

These findings reveal that, attitude towards personalised advertising is influenced by advertiser-controlled factors such as perceived control and, attitude towards brands is affected by user attitude towards an advertisement.

**8) Positive User Perceptions:** The main objective of personalised advertising was to make advertisements more relevant, personalised, useful, attractive and beneficial to viewers. Ad relevance have been considered an antecedent of OBA acceptance having a positive impact towards OBA acceptance, while having a negative impact towards OBA avoidance (Brinson & Britt, 2021). Perceived personalisation was tested as a predictor of ad avoidance by (Ham, 2016; Li & Huang, 2016) and at both instances resulted with a significant negative impact on OBA avoidance. Source attractiveness was found to increase ad irritation (Lin et al., 2021), however reciprocal altruism was able to reduce ad irritation. Reciprocal altruism makes viewers tolerant to personalised ads due to the advertisement contributing for further better content to watch specially in streaming services like YouTube. Ad relevance can be identified as an essential positive aspect of OBA.

**9) Negative User Perceptions:** User controlled factors are consisting of users' perceptions both negative and positive. Above section explained the positive perceptions and this section explains the negative perceptions. As identified in previous studies, ad-scepticism, ad-irritation, ad-intrusiveness, goal impediment, negative online experience, advertising invasiveness, psychological reactance and resistance to mobile advertising can be identified as factors that reflect negative perceptions of personalised advertising. These factors are leading to advertising avoidance, moderated by moderators such as gender and trust.

The interruption done to users during their engaged purse of tasks by advertisements is goal impediment (Li et al., 2002). Ad scepticism is the feeling of distrust Dillard and Shen (2005) and feeling sceptical about personalised advertisements has been empirically tested and confirmed as an antecedent of negative attitude towards advertisements (Brinson & Britt, 2021). Ad-invasiveness was found to have two main components as space invasiveness and attention invasiveness, both leading to ad-irritation (Niu et al., 2021). Ad-irritation is the extent to which a viewer perceives ad content as offensive and annoying Lin et al. (2021) and goal impediment is the obstruction or interruption to their task by an advertisement. These factors lead to negative outcomes of OBA such as, ad-blocker use and ad-avoidance.

It is evident that these negative user perceptions lead advertising failure, where viewers continuously ignore, avoid and block personalised advertisements, since they view those as a threat, disturbance to their online freedom.

**10) Knowledge:** Consumer knowledge on advertising tactics and advertising strategies used by advertisers have a significant influence on user perceptions of OBA. Persuasion knowledge is consumers' knowledge on persuasion tactics used in advertising. The belief consumers have in their own ability to make informed and effective decisions regarding the products or services being advertised is self-efficacy (Ham, 2016).

Increased consumer knowledge is the factor behind rising concerns about privacy leading to privacy concerns and privacy protection behaviours.

**11) Online Exposure:** The time duration a user is exposed to online activity and the frequency of using an online platform that has personalised advertisements affects their OBA outcomes. A user who is more frequently exposed to personalised ad content can take preventive actions to ensure their privacy and online freedom using ad-blocker software, this tendency is lower in a user who is less exposed to OBA.

**12) Moderators:** Moderators play a vital role by significantly moderating relationships between factors that directly and indirectly affect OBA outcomes. Trust, gender and psychological ownership were identified as moderators to the relationship between user-controlled factors and OBA outcome. Also, social and cultural factors with personality traits moderated the relationship between advertiser-controlled factors and user-controlled factors.

When reflecting on past empirical studies, as found by Brinson and Britt (2021) trust moderates the relationship between ad-scepticism and ad-avoidance, also moderates the relationship between ad scepticism and ad-blocker use. Furthermore, Bleier and Eisenbeiss (2015) proved that trusted retailers can increase their perceived usefulness of personalised advertisements without high privacy concerns, explaining how trust can alter a relationship between a user-controlled factor and an OBA outcome.

Gender is important in understanding the characteristics of users that change according to their personality and culture. Abuhashesh et al. (2021) tested the moderation effect of gender with the relationship between cultural factors individualism, uncertainty avoidance, power distance, long term orientation and masculinity on their combined effect to attitude on Facebook advertising, even though this study did not reveal a significant effect of gender on these variables, still further study into the variable was suggested with new developments of OBA.

Psychological ownership is the feeling of owning an object, in the case of OBA, mobile devices can be referred to as the object that users feel a psychological ownership to, which is threatened by personalised advertising practices that collect data without consent. A significant moderation impact of psychological ownership was identified by Niu et al. (2021) between social influence and space invasiveness.

In summary, user perceptions of OBA have been tested over and over in different forms to identify factors affecting OBA avoidance behaviour. However, is evident that most user perceptions are sceptical, concerned, and irritated with the unconsented personalised advertising leading to negative OBA outcomes.

**13) OBA Outcomes:** OBA outcomes are the final stage of personalised advertising process. Advertisers try to reach positive outcomes like OBA acceptance, click intentions, purchase intentions and brand engagement through additional features added with developing technology to make advertisements more individually targeted to users. Moreover, advertisers use more and more personalisation techniques to make advertisements directed to relevant users to reach these positive outcomes.

However, at instances where data is gathered without consent, privacy concerns go higher leading to privacy cynicism, which is a psychological state where internet users become hopeless in trying to protect their data from unauthorized access and surveillance conducted by advertising motives through synced social media platforms. Prevalence of privacy cynicism gives negative outcomes of OBA and fails to achieve advertisers' objectives of personalised advertising.

**D. Theories tested on OBA**

Following theories were tested in respective studies to test hypothesis in respective contexts.

**Table 7. Theories Tested on OBA**

Theory	Tested Study
Hofstede's Cultural Dimensions	(Abuhashesh et al., 2021)
Psychological reactance theory	(Hu and Wise, 2021)
Theory of psychological ownership	(Niu et al., 2021)
Advertising value model	(Sharma et al., 2022)
Meta-theoretical model of motivation and personality	(Amaranath and Jaidev, 2023)
Persuasion knowledge model	(Brinson and Britt, 2021)

Source: Authors' compilation.

**IV. CONCLUSION**

Personalised advertising practices have become the most sought-after advertising practice by advertisers due to its precision targeting ability. Data required for this advertising method are gathered with or without the knowledge and consent of internet users, rising privacy concerns, ad irritation and other negative perceptions that lead to ad-avoidance behaviours by users.

However, privacy paradox and privacy cynicism are evidence for users' hopelessness in trying to control the use of their personal data in this highly synced, competitive advertising environment, leading to negative user attitudes. This study provides a broader picture on OBA with themes and factors behind OBA, for advertisers to understand relationships between these factors with an integrated conceptual framework that reflects a synthesis of past literature on personalised advertising.

Online behavioural advertising industry is facing new developments with new technological innovations. Future studies can pay more attention to social and cultural factors, personality traits, behind OBA outcomes for better understanding of the reasons behind user behaviour. Also, continuous review is a requirement that can be fulfilled by future studies for each aspect of OBA for in-depth understanding of each theme identified in this study.

**REFERENCES**

- Abuhashesh, M.Y., Alshurideh, M.T., Ahmed, A.E., Sumadi, M. and Masa'deh, R.E., 2021. The effect of culture on customers' attitudes toward Facebook advertising: the moderating role of gender. *Review of International Business and Strategy*, 31(3), pp.416-437.
- Aiolfi, S., Bellini, S. and Pellegrini, D., 2021. Data-driven digital advertising: benefits and risks of online behavioral advertising. *International Journal of Retail & Distribution Management*, 49(7), pp.1089-1110.
- About Ali, A., Abbass, A. and Farid, N., 2020. Factors influencing customers' purchase intention in social commerce. *International Review of Management and Marketing*, 10(5), p.63.

- Amarnath, D.D. and Jaidev, U.P., 2023. Personality and Psychological Predictors of Instagram Personalized Ad Avoidance. *International Journal of E-Business Research (IJEER)*, 19(1), pp.1-22.
- Bleier, A. and Eisenbeiss, M., 2015. The importance of trust for personalized online advertising. *Journal of Retailing*, 91(3), pp.390-409.
- Boerman, S.C., Kruikemeier, S. and Zuiderveen Borgesius, F.J., 2017. Online behavioral advertising: A literature review and research agenda. *Journal of advertising*, 46(3), pp.363-376.
- Braun, V. and Clarke, V., 2006. Using thematic analysis in psychology. *Qualitative research in psychology*, 3(2), pp.77-101.
- Brinson, N.H. and Britt, B.C., 2021. Reactance and turbulence: Examining the cognitive and affective antecedents of ad blocking. *Journal of Research in Interactive Marketing*, 15(4), pp.549-570.
- Chandrasekaran, S., Annamalai, B. and De, S.K., 2019. Evaluating marketer generated content popularity on brand fan pages—a multilevel modelling approach. *Telematics and Informatics*, 44, p.101266.
- Chen, J. and Stallaert, J., 2014. An economic analysis of online advertising using behavioral targeting. *Mis Quarterly*, 38(2), pp.429-A7.
- Cho, H., Rivera-Sánchez, M. and Lim, S.S., 2009. A multinational study on online privacy: global concerns and local responses. *New media & society*, 11(3), pp.395-416.
- Choi, D. and Kim, J., 2022. The impacts of ad skip option and ad time display on viewer response to in-stream video ads: the role of perceived control and reactance. *Internet Research*, 32(3), pp.790-813.
- Ciuchita, R., Gummerus, J.K., Holmlund, M. and Linhart, E.L., 2023. Programmatic advertising in online retailing: consumer perceptions and future avenues. *Journal of Service Management*, 34(2), pp.231-255.
- Daems, K., De Keyser, F., De Pelsmacker, P. and Moons, I., 2019. Personalized and cued advertising aimed at children. *Young Consumers*, 20(2).
- Dienlin, T. and Trepte, S., 2015. Is the privacy paradox a relic of the past? An in-depth analysis of privacy attitudes and privacy behaviors. *European journal of social psychology*, 45(3), pp.285-297.
- Dillard, J.P. and Shen, L., 2005. On the nature of reactance and its role in persuasive health communication. *Communication monographs*, 72(2), pp.144-168.
- Grau, S.L. and Zotos, Y.C., 2018. Gender stereotypes in advertising: a review of current research. *Current Research on Gender Issues in Advertising*, pp.3-12.
- Guo, B. and Sismeiro, C., 2020. Between click and purchase: predicting purchase decisions using clickstream data. In *Advances in Consumer Research* (Vol. 47, pp. 608-609). Association for Consumer Research.
- Ham, C.D., 2017. Exploring how consumers cope with online behavioral advertising. *International Journal of Advertising*, 36(4), pp.632-658.
- Holvoet, S., Hudders, L. and Herrewijn, L., 2021. How to empower parental responsibility: parents' views on personalized advertising and online data collection targeting their teens. *Young Consumers*, 22(4), pp.630-643.
- Hu, X. and Wise, K., 2021. How playable ads influence consumer attitude: exploring the mediation effects of perceived control and freedom threat. *Journal of Research in Interactive Marketing*, 15(2), pp.295-315.

- Jain, S. and Purohit, H.C., 2022. Privacy concerns and avoidance behaviour towards data-driven online behavioural advertising. *Business Analyst Journal*, 43(1), pp.1-12.
- Jung, A.R. and Heo, J., 2021. Does cluttered social media environment hurt advertising effectiveness? The moderation of ad types and personalization. *Journal of Research in Interactive Marketing*, 15(4), pp.592-606.
- Kabigting, R.P., Paner, A.A., Jimenez, L.E.F. and Mendoza, R.T.A., 2021. Social Media Exposure and its Perceived Impact on Students' Home-Based Tasks Productivity. *Studies in Humanities and Education*, 2(1), pp.70-78.
- Kim, H. and Huh, J., 2017. Perceived relevance and privacy concern regarding online behavioral advertising (OBA) and their role in consumer responses. *Journal of Current Issues & Research in Advertising*, 38(1), pp.92-105.
- Lee, S., Lee, Y., Lee, J.I. and Park, J., 2015. Personalized e-services: consumer privacy concern and information sharing. *Social Behavior and Personality: an international journal*, 43(5), pp.729-740.
- Li, B. and Yin, S., 2021. How perceived control affects advertising avoidance intention in a skippable advertising context: a moderated mediation model. *Chinese Journal of Communication*, 14(2), pp.157-175.
- Li, N.P., Bailey, J.M., Kenrick, D.T. and Linsenmeier, J.A., 2002. The necessities and luxuries of mate preferences: testing the tradeoffs. *Journal of personality and social psychology*, 82(6), p.947.
- Li, W. and Huang, Z., 2016. The research of influence factors of online behavioral advertising avoidance. *American Journal of Industrial and Business Management*, 6(9), pp.947-957.
- Lin, H.C.S., Lee, N.C.A. and Lu, Y.C., 2021. The mitigators of ad irritation and avoidance of YouTube skippable in-stream ads: An empirical study in Taiwan. *Information*, 12(9), p.373.
- Lun, V.M.C. and Bond, M.H., 2006. Achieving relationship harmony in groups and its consequence for group performance. *Asian Journal of Social Psychology*, 9(3), pp.195-202.
- Mo, L., Zhang, X., Lin, Y., Yuan, Z. and Peng, Z., 2023. Consumers' attitudes towards online advertising: A model of personalization, informativeness, privacy concern and flow experience. *Sustainability*, 15(5), p.4090.
- Mowen, J.C. and Mowen, J.C., 2000. The 3M: a meta-theoretic model of motivation and personality. *The 3M Model of Motivation and Personality: Theory and Empirical Applications to Consumer Behavior*, pp.1-10.
- Nissenbaum, H., 2011. Privacy in context: Technology, policy, and the integrity of social life. *Journal of Information Policy*, 1, pp.149-151.
- Niu, X., Wang, X. and Liu, Z., 2021. When I feel invaded, I will avoid it: The effect of advertising invasiveness on consumers' avoidance of social media advertising. *Journal of Retailing and Consumer Services*, 58, p.102320.
- Nyheim, P., Xu, S., Zhang, L. and Mattila, A.S., 2015. Predictors of avoidance towards personalization of restaurant smartphone advertising: A study from the Millennials' perspective. *Journal of Hospitality and Tourism Technology*, 6(2), pp.145-159.
- Ratten, V., 2015. A cross-cultural comparison of online behavioural advertising knowledge, online privacy concerns and social networking using the technology acceptance model and social cognitive theory. *Journal of Science & Technology Policy Management*, 6(1), pp.25-36.

- Rejón-Guardia, F. and Martínez-López, F.J., 2014. Online advertising intrusiveness and consumers' avoidance behaviors. *Handbook of strategic e-business management*, pp.565-586.
- Rózsa, Z., Ferencáková, L., Zámek, D. and Firstová, J., 2024. Generation Z's perception of privacy on social media: Examining the impact of personalized advertising, interpersonal relationships, reference group dynamics, social isolation, and anxiety on self-disclosure willingness. *Oeconomia Copernicana*, 15(1), pp.229-266.
- Sahli, A. and Zhai, Y., 2024. Cultivating consumer resilience: understanding and navigating adolescents' responses to intrusive advertising. *International Journal of Organizational Analysis*.
- Segijn, C.M., Kim, E., Lee, G., Gansen, C. and Boerman, S.C., 2024. The intended and unintended effects of synced advertising: When persuasion knowledge could help or backfire. *International Journal of Research in Marketing*, 41(1), pp.156-169.
- Segijn, C.M. and Van Ooijen, I., 2022. Differences in consumer knowledge and perceptions of personalized advertising: Comparing online behavioural advertising and synced advertising. *Journal of Marketing Communications*, 28(2), pp.207-226.
- Sharma, A., Dwivedi, R., Mariani, M.M. and Islam, T., 2022. Investigating the effect of advertising irritation on digital advertising effectiveness: A moderated mediation model. *Technological Forecasting and Social Change*, 180, p.121731.
- Siani, M. G, Mohammadi, S., Soltan Hosseini, M. and Dickson, G., 2021. Comparing young adult responses to rational and emotional sports product advertisements: the moderating role of product type and gender. *International Journal of Sports Marketing and Sponsorship*, 22(4), pp.798-815.
- Speck, P.S. and Elliott, M.T., 1997. Predictors of advertising avoidance in print and broadcast media. *Journal of advertising*, 26(3), pp.61-76.
- Tran, T.P., van Solt, M. and Zemanek Jr, J.E., 2020. How does personalization affect brand relationship in social commerce? A mediation perspective. *Journal of Consumer Marketing*, 37(5), pp.473-486.
- Udadeniya, U.P.R., Yalegama, M.M.H., Wickramasinghe, A.D., Mannapperuma, M.Y.S. and Jayasuriya, K.K.N., 2019. Online Behavioral Advertising Avoidance in Online Retailing in Sri Lanka.
- Viktoratos, I. and Tsadiras, A., 2021. Personalized advertising computational techniques: A systematic literature review, findings, and a design framework. *Information*, 12(11), p.480.
- Warren, S. and Brandeis, L., 1989. The right to privacy. In *Killing the Messenger: 100 Years of Media Criticism* (pp. 1-21). Columbia University Press.
- Westjohn, S.A., Singh, N. and Magnusson, P., 2012. Responsiveness to global and local consumer culture positioning: A personality and collective identity perspective. *Journal of International Marketing*, 20(1), pp.58-73.
- Pathirana, I.R., 2018. Study on Online Behavioural Add Avoidance in Sri Lankan Online Advertising. *Asia Proceedings of Social Sciences*, 2(3), pp.159-163.
- Yin, S., Li, B. and Zhou, Q., 2023. The impact of skippable advertising on advertising avoidance intention in China. *Marketing Intelligence & Planning*, 41(8), pp.1121-1137.