

# Influence of Online Pop-Up Advertising on Buying Habits among Students in Selected Nigerian Higher Institutions

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## ABSTRACT

*This study examined the influence of online pop-up advertising on students' buying habits in selected higher institutions in Nigeria. The specific objectives were to investigate the psychological and emotional impact of online pop-up advertisements on students and to examine how such advertisements influence their buying habits. A descriptive survey research design was adopted, and data were collected from a sample of 501 students using a multistage sampling technique and questionnaire was administered using a digital means. The data was analyzed using descriptive statistics and Chi-square ( $\chi^2$ ) inferential analysis at a 0.05 level of significance. The findings revealed that online pop-up advertising has a significant psychological and emotional impact on students, as it captured attention and stimulates interest, while also generating negative responses such as irritation and distraction. Furthermore, the results indicated that online pop-up advertisements significantly influence students' buying habits and decision-making processes, particularly in terms of impulse buying and responsiveness to promotional offers such as discounts. The Chi-square test results led to the rejection of the null hypotheses, confirming that a significant relationship exists between exposure to pop-up advertising and students' purchasing habit. The study concluded that online pop-up advertising is an effective digital marketing tool for influencing students' buying habit; the study also revealed that pop-up advertisements are effective in capturing attention and increasing product awareness among students. The study recommended that marketers should adopt user-friendly and personalized pop-up advertising strategies to enhance engagement while minimizing negative user experiences.*

**Keywords**— Online Advertising, Pop-Up Ads, Buying Habits, Digital Marketing, Consumer Decision-Making.

## I. INTRODUCTION

The evolution of online advertising has significantly transformed the global marketing landscape, with digital platforms increasingly outperforming traditional offline media in terms of reach, engagement, and measurability. Recent studies emphasize that digital advertising effectiveness is driven by personalization, interactivity, and data analytics capabilities (Liu-Thompkins, 2022; Yadav & Pavlou, 2023). The

integration of various forms of online display advertisements, particularly pop-up advertisements, has revolutionized how businesses communicate with and influence their target audiences. These formats are designed to capture immediate user attention and stimulate engagement, often leading to higher conversion rates (Taylor et al., 2022).

The widespread adoption of internet usage, especially among students, has further strengthened the importance of online advertising. Students, as digital natives, exhibit high levels of online engagement and responsiveness to digital content. Their constant interaction with social media, e-commerce platforms, and educational technologies makes them highly susceptible to targeted advertising strategies (Dwivedi et al., 2023). This demographic is particularly relevant to marketers due to their evolving consumption patterns and openness to digital experiences.

However, while online pop-up advertising is effective in capturing attention, it also raises concerns regarding intrusiveness and user irritation. Studies have shown that consumers often experience a trade-off between personalization benefits and privacy concerns, commonly referred to as the personalization–privacy paradox (Aguirre et al., 2023; Okazaki et al., 2022). This duality makes it essential to understand both the positive and negative psychological responses triggered by pop-up advertisements.

In light of these developments, this study seeks to examine the influence of online pop-up advertising on students' buying habits. By exploring students' perceptions, responses, and purchasing behaviors in relation to pop-up ads, the study aims to provide valuable insights into how this form of digital advertising shapes consumer decision-making within the student population. The main objective of the study is to examine the influence of online pop-up advertising on students' buying habits, while the specific objectives are to investigate the psychological and emotional impact of online pop-up advertising on students and find out the buying habits and decision-making processes of students in response to online pop-up advertisements.

## II. LITERATURE REVIEW

### A. *Online Pop-up Advertising*

Online pop-up advertising is a form of digital advertising that appears suddenly on a user's screen while browsing a website, using an application, or engaging with online content. Pop-up advertisements are designed to capture immediate attention by displaying promotional messages in a separate window or overlay that interrupt or accompanies the user's online activity. They are widely used by businesses to increase brand awareness, generate website traffic, promote products and services, and encourage

immediate consumer action such as purchases, subscriptions, or downloads (Chaffey & Ellis-Chadwick, 2022).

The emergence of online pop-up advertising is closely linked to the rapid growth of internet usage and digital marketing. As businesses increasingly shift their marketing activities to digital platforms, pop-up advertisements have become a popular strategy for reaching consumers in real time. Unlike traditional advertising channels, online pop-up advertisements provide opportunities for direct interaction with consumers through clickable links, personalized messages, and promotional offers (Liu-Thompkins, 2022). This capability makes them an effective tool for influencing consumer attitudes and purchase intentions.

Online pop-up advertisements exist in different forms. These include entry pop-ups, which appear immediately when a user visits a website; exit-intent pop-ups, which appear when users attempt to leave a website; promotional pop-ups, which advertise discounts and special offers; and subscription pop-ups, which encourage users to sign up for newsletters or updates. Each type is designed to achieve specific marketing objectives and enhance consumer engagement (Chaffey & Ellis-Chadwick, 2022).

One of the major advantages of online pop-up advertising is its ability to attract attention quickly. Because pop-up advertisements interrupt users' browsing activities, they are difficult to ignore and often achieve higher visibility than standard banner advertisements. Research has shown that online advertisements that are relevant, informative, and visually appealing can positively influence consumers' attitudes toward products and increase purchase intentions (Kim & Han, 2022). Additionally, personalized pop-up advertisements can enhance consumer engagement by presenting content that matches users' interests and preferences (Aguirre et al., 2023).

Despite these advantages, online pop-up advertising has been criticized for its intrusive nature. Many internet users perceive pop-up advertisements as disruptive because they interfere with online activities and may reduce the overall user experience. Edwards, Li, and Lee (2002) found that forced exposure to pop-up advertisements often generates feelings of irritation and psychological reactance among consumers. Similarly, Boateng and Okoe (2023) reported that perceived intrusiveness negatively affects consumers' attitudes toward online advertising and may lead to advertisement avoidance.

The effectiveness of online pop-up advertising depends largely on its relevance, timing, and presentation. Consumers are more likely to respond positively to advertisements that provide useful information, personalized recommendations, and attractive incentives such as discounts or special promotions (Zhang &

Mao, 2023). Conversely, excessive exposure to irrelevant or repetitive pop-up advertisements can result in advertising fatigue and reduced effectiveness (Dwivedi et al., 2023).

Among students, online pop-up advertising plays a significant role in shaping consumer awareness and purchasing behavior. Students are among the most active internet users and are frequently exposed to digital advertisements through websites, social media platforms, educational portals, and e-commerce sites. Exposure to online pop-up advertisements can influence their perceptions, attitudes, and buying decisions, particularly when the advertisements relate to products and services relevant to their needs and interests. As a result, marketers increasingly target students through digital advertising campaigns aimed at influencing their purchasing behavior.

Online pop-up advertising remains an important component of digital marketing because of its ability to capture attention, promote products, and influence consumer behavior. However, marketers must balance advertising effectiveness with user experience by designing relevant, informative, and less intrusive advertisements. When properly implemented, online pop-up advertisements can enhance consumer engagement, increase brand awareness, and positively influence purchasing decisions.

#### *B. Buying Behaviour and Decision-Making Process*

Consumer buying behavior in the digital environment is influenced by multiple factors, including advertising exposure, perceived credibility, and engagement levels. Kim and Han (2022) found that online advertising significantly affects consumer decision-making, particularly when users are highly involved with the product. Additionally, Zhang and Mao (2023) revealed that advertising credibility and user engagement play critical roles in converting online exposure into actual purchase intention.

Varma and Agarwal (2014) stated that online buying or shopping refers to the process of researching and purchasing products or services over the Internet. The online transaction involves three steps which are: process information retrieval, information transfer, and product purchase. However, the entire online buying has been divided into two stages: the first stage consists of searching, comparing and selecting, placing an order termed as ordering stage and the second stage involves order tracking and keeping or returning termed as order fulfillment stage (Liao et. al. 2010).

Consumer behavior is the investigation of people, gatherings, or associations and the cycles they use to look for, select, secure, and discard items, administrations, encounters, or thoughts to fulfill needs and the effects that these cycles have on the customer and society (Kuester, 2012). Regarding the aforementioned, consumer behavior of every individual is different from the other depending on their buying choices which

are influenced by buying habits and choices that are in turn tampered by psychological and social drivers that affect the purchase decision process (Brassington & Pettitt, 2000). According to Kotler (2004), multiple factors affect consumer behavior, among them are; economic status, beliefs, and values, culture, personality, age, and education. Findings on consumer behavior are used to develop methods and products that will boost company performance and sales.

### *C. Theoretical Review*

#### *(i) Perception Theory*

Berelson and Steiner (1994) propounded the perception theory. According to them, perception is a complex process by which individuals select, organize, and interpret sensory stimulation into a meaningful and coherent picture of the world. Bennett et. al. (1989), states that perception is notably active, it involves learning, updating perspective, and interacting with the observed. Conversely, Arnould et. al. (2004), explain perception to be the process of giving meaning to sensory stimuli. People act and react based on their perceptions, i.e. the way they sense and interpret the world around them. Consumers' perceptions are fundamental to the understanding acquisition, consumption, and disposal of goods and services.

#### *(ii) Theory of Buyer Behaviour*

The theory of buyer behavior was developed by John and Jagdish (1963). This theory is based on the notion that the consumer behaves rationally during purchase after being exposed to stimuli repeatedly and this decision is a result of incentives that have their source in the environment (input variables). It looks at how Input variables i.e. messages serve as stimuli that draw the buyer into the consideration of purchasing a product.

According to them, three different types of stimuli can influence the buyer and they include: firstly, the environmental stimuli that the consumer is subjected to, and they can be communicated from a variety of sources. Secondly, significative stimuli which are the actual elements of products and brands that the buyer confronts. Lastly, symbolic stimuli which refer to the representations of products and brands as constructed by marketers through advertising and act on the consumer indirectly. The influence of such stimuli is internalized by the consumer before they affect the decision process. However, it is seen that these stimuli must be in sync with the individual's psychological makeup (such as personality, stored information experience, attitudes) and external variables (such as the value of the purchase for the buyer, the character traits of the consumer, membership of a social group, the financial status of a consumer and the pressure of time). All of these serve to control, filter, and process the stimuli that are received. Output variables are

hence considered as the result of the effectiveness of the awareness and they include purchase intention, attitude, brand perception, and attention.

#### *D. Empirical Review*

Empirical studies provide strong evidence of the effectiveness of online advertising in influencing consumer behavior. Dafnie Racheal M. and Sri Archana E. (2025) conducted a study titled "An Analytical Study on Students' Purchasing Intentions Influenced by Short Video Advertisements." The study aimed to examine the influence of digital advertisements on students' purchasing intentions and identify the factors that determine advertisement effectiveness. The research covered the period between 2024 and 2025. The independent variable was digital advertisement exposure, measured through information usefulness, emotional appeal, and advertisement attractiveness, while the dependent variable was students' purchase intention. Primary data were collected through structured questionnaires administered to students. Descriptive statistics and regression analysis were employed for data analysis. The findings revealed that advertisement attractiveness, emotional appeal, and information usefulness significantly influenced students' purchase intentions. The study concluded that digital advertising positively affects students' buying decisions and encourages purchase intentions. However, the study focused on short-video advertisements and not online pop-up advertisements, thereby creating a gap for the present study.

Vasan, Rao, and Gupta (2025) carried out a study titled "Examining the Impact of Advertising, Firm-Generated Content, and User-Generated Content on Customers' Propensity to Buy Food Online." The objective of the study was to investigate the effects of online advertising and digital content on consumers' online purchasing behavior. The study covered the period from 2024 to 2025. The independent variables included online advertising, firm-generated content, and user-generated content, while the dependent variable was consumers' online purchase propensity. The researchers utilized survey data collected from online consumers and analyzed the data using Structural Equation Modeling (SEM). The findings indicated that online advertising significantly and positively influenced consumers' willingness to purchase products online. The study concluded that digital advertising remains an important determinant of online buying behavior. Nevertheless, the research concentrated on general online consumers and food purchases rather than students' responses to online pop-up advertisements.

Aoki and Matsui (2025) conducted a study titled "Does Algorithmic Recommendation Complement or Substitute Advertising and Influencers? Consumer Attitudes Toward Recommendation Information and the Formation of Purchase Intentions." The objective of the study was to examine how advertising messages and recommendation systems affect consumer purchase intentions. The study was conducted in 2025. The

independent variables were advertising messages, recommendation systems, and influencer information, while purchase intention served as the dependent variable. Data were obtained through consumer surveys and analyzed using quantitative statistical techniques. The findings revealed that advertising messages significantly influenced consumer attitudes and purchase intentions. The study concluded that online advertising continues to play a crucial role in shaping consumer behavior despite the increasing use of recommendation systems. However, the study did not specifically investigate the psychological and emotional impact of pop-up advertising among students.

A recent study published in the Journal of Theoretical and Applied Electronic Commerce Research (2025) titled "The Impact of Mobile Advertising Cue Types on Consumer Response Behaviors: Evidence from a Field Experiment" sought to determine how different mobile advertising cues influence consumer responses and purchasing behavior. The study covered the year 2025. The independent variable was mobile advertising cues, measured through word-of-mouth cues, price cues, and product cues, while the dependent variables were advertisement clicks and purchase behavior. Behavioral data were collected from approximately 45,000 users of a mobile learning platform. The researchers employed field experimentation and mediation analysis for data analysis. The findings showed that advertising cues significantly increased advertisement clicks and purchasing behavior. The study concluded that well-designed digital advertisements positively affect consumer actions and purchases. However, the study focused on mobile advertising cues and did not specifically examine online pop-up advertisements or students' emotional reactions.

Kumar, Gupta, and Holani (2026) conducted a study titled "Social Media Advertising and Consumer Buying Behaviour: An Empirical Study." The objective was to investigate the influence of social media advertising on consumer buying behavior. The study was conducted in 2026. The independent variables included advertisement recall, brand trust, and user-generated reviews, while the dependent variable was consumer buying intention. Primary data were collected from 226 respondents through structured questionnaires and analyzed using multiple regression analysis. The results indicated that advertisement recall, brand trust, and online reviews significantly influenced consumers' buying intentions. The study concluded that advertising exposure and psychological factors significantly shape consumer purchase decisions. Nevertheless, the study focused on social media advertising generally and did not examine online pop-up advertising among students.

Similarly, Goyal and Bansal (2026) conducted a study titled "Where Emotion Meets Action: Designing Company Websites for Buying Behavior—An Empirical Study Using PLS-SEM." The objective of the

study was to examine how website design and online information influence consumer emotions and purchase intentions. The study covered the year 2026. Website design, information quality, and user experience served as the independent variables, while emotional engagement and purchase intention were the dependent variables. Data were collected from 400 online shoppers through questionnaires and analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). The findings revealed that website design and information quality significantly enhanced emotional engagement and purchase intentions among consumers. The study concluded that positive online experiences increase consumers' willingness to purchase products. However, the study focused on website design rather than online pop-up advertising and did not specifically investigate students' buying habits.

### III. MATERIALS AND METHOD

#### A. Research Design

This study adopted a descriptive survey research design. The choice of this design is appropriate because it allows for the systematic collection of data from a large population in order to describe and analyze the influence of online pop-up advertising on students' buying habits.

#### B. Population of the Study

The population of the study comprises of undergraduate students in these selected higher institutions in Nigeria, The Federal Polytechnic Ado-Ekiti, Ekiti State, Federal University of Technology, Akure Ondo-State, Federal Polytechnic Ede, Osun State and Adeniran Ogunsanya College of Education, Lagos State. These students were chosen because they represent active internet users who are frequently exposed to online advertisements, particularly pop-up ads. The population includes students across different faculties and academic levels, ensuring a diverse representation of respondents.

#### C. Sample Size and Sampling Technique

A total of 501 students were selected using a multistage sampling technique, which combines both probability and non-probability method. The sample size is considered adequate for survey research, as studies suggest that a sample size between 30 and 500 or more can provide reliable and generalizable results depending on the population size and variability. This approach enhances the representativeness and reliability of the data collected.

#### D. Validity of the Instrument

To ensure the validity of the research instrument, the questionnaire was subjected to face and content validity. Experts in marketing and research methodology reviewed the instrument to ensure that it

adequately captured the variables under study and aligned with the research objectives. Necessary corrections and modifications were made based on their feedback.

#### *E. Method of Data Collection*

Data were collected through direct administration of questionnaires to the selected respondents. The researcher ensured that respondents clearly understood the purpose of the study and were given adequate time to complete the questionnaire. Participation was voluntary, and confidentiality of responses was guaranteed.

#### *F. Method of Data Analysis*

The data collected were analyzed using both descriptive and inferential statistical tools:

(i) Descriptive Statistics: Frequency distribution, percentages, mean, and standard deviation were used to summarize the data.

(ii) Inferential Statistics: Chi-square ( $\chi^2$ ) was used to test the stated hypotheses and determine the relationship between online pop-up advertising and students' buying habits.

The analysis was conducted using the Statistical Package for Social Sciences (SPSS) to ensure accuracy and reliability of results. Statistical significance was tested at a 0.05 level of significance.

### **IV. RESULTS AND DISCUSSION**

Data were collected from 501 students in selected higher institutions in Nigeria. The analysis is guided by the study objectives, which focus on the psychological and emotional impact of online pop-up advertising, as well as its influence on students' buying habits and decision-making processes. Data were analyzed using descriptive statistics and Chi-square ( $\chi^2$ ) inferential statistics at a 0.05 level of significance. Table 1 shows the frequency distribution of the responses collected on the psychological and emotional impact of online pop-up advertising on students while Table 2 shows that of buying habits and decision-making processes of students in response to online pop-up advertisements.

**Table 1: Psychological and emotional impact of online pop-up advertising on students.**

| <b>Response Category</b> | <b>Frequency</b> |
|--------------------------|------------------|
| Strongly Agree           | 205              |
| Agree                    | 175              |
| Neutral                  | 55               |
| Disagree                 | 40               |
| Strongly Disagree        | 26               |
| <b>Total</b>             | <b>501</b>       |

**Table 2: Buying habits and decision-making processes of students in response to online pop-up advertisements.**

| Response Category | Frequency  |
|-------------------|------------|
| Strongly Agree    | 190        |
| Agree             | 180        |
| Neutral           | 65         |
| Disagree          | 40         |
| Strongly Disagree | 26         |
| <b>Total</b>      | <b>501</b> |

*A. Chi-Square ( $\chi^2$ ) Analysis for Objective One*

To determine whether online pop-up advertising has a significant psychological and emotional impact on students, the Chi-square test was applied (Table 3).

Expected Frequency (Fe):  $Fe = \text{Total respondents} \div \text{Number of categories} = 501 \div 5 = 100.2$

**Table 3: Chi-Square Calculation for Objective 1**

| Response                         | Fo  | Fe    | (Fo – Fe) | (Fo – Fe) <sup>2</sup> / Fe |
|----------------------------------|-----|-------|-----------|-----------------------------|
| SA                               | 205 | 100.2 | 104.8     | 109.56                      |
| A                                | 175 | 100.2 | 74.8      | 55.86                       |
| N                                | 55  | 100.2 | -45.2     | 20.39                       |
| D                                | 40  | 100.2 | -60.2     | 36.16                       |
| SD                               | 26  | 100.2 | -74.2     | 54.96                       |
| <b>Total <math>\chi^2</math></b> |     |       |           | <b>276.93</b>               |

*Decision Rule:*

- Degree of freedom (df) =  $k - 1 = 5 - 1 = 4$
- Critical value at 0.05 level = 9.488

*Decision:* Since calculated  $\chi^2$  (276.93) > critical  $\chi^2$  (9.488), the null hypothesis is rejected.

This result indicates that online pop-up advertising has a significant psychological and emotional impact on students. The high frequency of agreement responses suggests that students experience both attention and emotional reactions (such as interest and irritation) when exposed to pop-up advertisements.

*B. Chi-Square ( $\chi^2$ ) Analysis for Objective Two (Table 4)*

Expected Frequency (Fe):  $Fe = 501 \div 5 = 100.2$

**Table 4: Chi-Square Calculation for Objective Two**

| Response                         | Fo  | Fe    | (Fo – Fe) | (Fo – Fe) <sup>2</sup> / Fe |
|----------------------------------|-----|-------|-----------|-----------------------------|
| SA                               | 190 | 100.2 | 89.8      | 80.42                       |
| A                                | 180 | 100.2 | 79.8      | 63.55                       |
| N                                | 65  | 100.2 | -35.2     | 12.37                       |
| D                                | 40  | 100.2 | -60.2     | 36.16                       |
| SD                               | 26  | 100.2 | -74.2     | 54.96                       |
| <b>Total <math>\chi^2</math></b> |     |       |           | <b>247.46</b>               |

*Decision Rule:*

- $df = 4$
- Critical  $\chi^2 = 9.488$

*Decision:* Since calculated  $\chi^2$  (247.46) > critical  $\chi^2$  (9.488), the null hypothesis is rejected.

The first finding of the study revealed that online pop-up advertising has a significant psychological and emotional impact on students. The result of the Chi-square analysis showed that students experience emotional reactions such as curiosity, excitement, interest, irritation, and distraction when exposed to online pop-up advertisements. This finding is consistent with the study of Edwards, Li, and Lee (2002), who found that pop-up advertisements generate psychological reactance and emotional responses due to their intrusive nature. The finding also agrees with Boateng and Okoe (2023), who reported that online advertisements significantly influence consumers' emotional states and attitudes depending on their perceived relevance and usefulness. Similarly, Goyal and Bansal (2026) found that online experiences and digital content significantly affect consumers' emotional engagement and behavioral responses. These studies support the present finding that online pop-up advertisements have the capacity to influence students' psychological and emotional reactions.

The finding is further supported by the Theory of Planned Behavior (Ajzen, 1991), which explains that individuals' attitudes toward a stimulus influence their intentions and subsequent behavior. Exposure to online pop-up advertisements shapes students' perceptions and attitudes toward advertised products, thereby influencing their emotional responses and behavioral intentions.

The second finding revealed that online pop-up advertising significantly influences students' buying habits and decision-making processes. This finding is in agreement with the study conducted by Dafnie and Archana (2025), which found that digital advertisements significantly influence students' purchasing intentions through emotional appeal, information usefulness, and advertisement attractiveness. The finding also corroborates the study of Vasan, Rao, and Gupta (2025), who reported that online advertising positively affects consumers' willingness to purchase products online. Likewise, Kumar, Gupta, and Holani (2026) found that advertising exposure, advertisement recall, and brand trust significantly influence consumer buying intentions and purchasing behavior.

Furthermore, the finding aligns with the study of Aoki and Matsui (2025), who observed that online advertising significantly influences consumer attitudes and purchase intentions despite the increasing role of recommendation systems. Similarly, the study published in the Journal of Theoretical and Applied Electronic Commerce Research (2025) revealed that digital advertising cues significantly increase consumer engagement and purchasing behavior. These findings collectively suggest that online advertisements serve as powerful marketing tools capable of influencing consumers' purchasing decisions.

The finding is also consistent with the Howard-Sheth Theory of Buyer Behaviour (Howard & Sheth, 1969), which posits that consumers process marketing stimuli through perception, learning, and attitude formation before making purchase decisions. In the present study, online pop-up advertisements served as marketing stimuli that exposed students to information about products and services, thereby influencing their buying habits and decision-making processes.

Overall, the findings of this study are consistent with previous empirical studies, which established that online advertising significantly affects consumer emotions, attitudes, purchase intentions, and buying behavior. However, unlike previous studies that focused on social media advertising, short-video advertising, mobile advertising, and recommendation systems, the present study specifically examined online pop-up advertising among students in Nigerian higher institutions. Therefore, the study contributes to existing literature by providing empirical evidence on the psychological, emotional, and behavioral effects of online pop-up advertising on students' buying habits within the Nigerian context.

## V. CONCLUSION

This study examined the influence of online pop-up advertising on students' buying habits in selected higher institutions in Nigeria. The findings revealed that online pop-up advertising has a significant psychological and emotional impact on students, generating reactions such as curiosity, excitement, interest, irritation, and distraction. The study further established that online pop-up advertisements significantly influence students' buying habits and decision-making processes by increasing product awareness, stimulating purchase intentions, and encouraging purchasing behavior.

The study concludes that online pop-up advertising is an effective digital marketing tool capable of shaping students' attitudes, emotions, and consumer behavior. While well-designed and relevant pop-up advertisements can positively influence purchasing decisions, excessive or intrusive advertisements may create negative emotional responses among students. Therefore, the effectiveness of online pop-up advertising depends largely on its relevance, credibility, informativeness, and user-friendliness. Overall, online pop-up advertising remains a significant factor influencing students' buying habits and purchasing decisions in the digital age.

## VI. RECOMMENDATIONS

Based on the findings and conclusion of the study, the following recommendations are made:

1. Marketers should design relevant and less intrusive pop-up advertisements to reduce irritation and improve students' attitudes toward advertised products. This will enhance user experience and increase advertisement effectiveness.
2. Businesses should provide personalized and informative pop-up advertisements that match students' interests and needs. Relevant advertising content is more likely to influence positive buying decisions and increase purchase intentions.
3. Educational institutions should promote digital literacy among students to help them critically assess online advertisements. This will enable students to make rational purchasing decisions and avoid impulsive buying behavior.
4. Advertisers should ensure credibility and transparency in their advertisements by providing accurate product information. Trustworthy advertisements are more likely to attract positive responses and encourage purchasing behavior.

5. Website owners should regulate the frequency and timing of pop-up advertisements to prevent advertisement fatigue and negative emotional reactions. Proper advertisement placement can improve user satisfaction while maintaining marketing effectiveness.
6. Future researchers should investigate other factors affecting students' buying habits, such as consumer trust, brand loyalty, and online shopping behavior. This will provide a broader understanding of the relationship between digital advertising and consumer behavior.

## REFERENCES

- Aguirre, E., Roggeveen, A. L., Grewal, D., & Wetzels, M. (2023). The personalization–privacy paradox in digital advertising: A consumer perspective. *Journal of Retailing and Consumer Services*, 70, 103123. <https://doi.org/10.1016/j.jretconser.2022.103123>
- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179–211. [https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/10.1016/0749-5978(91)90020-T)
- Aoki, K., & Matsui, T. (2025). Does algorithmic recommendation complement or substitute advertising and influencers? Consumer attitudes toward recommendation information and the formation of purchase intentions. *Computers in Human Behavior*, 165, 108456. <https://doi.org/10.1016/j.chb.2025.108456>
- Boateng, H., & Okoe, A. F. (2023). Consumers' attitude towards online advertising: The role of perceived intrusiveness and irritation. *Journal of Consumer Behaviour*, 22(2), 215–228.
- Chaffey, D., & Ellis-Chadwick, F. (2022). *Digital marketing: Strategy, implementation and practice* (8th ed.). Pearson Education.
- Dafnie, R. M., & Archana, S. E. (2025). An analytical study on students' purchasing intentions influenced by short video advertisements. *International Journal of Research in Commerce and Management Studies*, 7(2), 45–58.
- Dehghani, M., & Tumer, M. (2022). A research on effectiveness of Facebook advertising on enhancing purchase intention of consumers. *Computers in Human Behavior Reports*, 5, 100143. <https://doi.org/10.1016/j.chbr.2021.100143>
- Dwivedi, Y. K., Ismagilova, E., Hughes, D. L., et al. (2023). Setting the future of digital and social media marketing research: Perspectives and research propositions. *International Journal of Information Management*, 68, 102168.

- Edwards, S. M., Li, H., & Lee, J. H. (2002). Forced exposure and psychological reactance: Antecedents and consequences of the perceived intrusiveness of pop-up ads. *Journal of Advertising*, 31(3), 83–95. <https://doi.org/10.1080/00913367.2002.10673678>
- Gossage, D. (2019). *The book of Gossage: Is there any hope for advertising?* Advertising Insight Press.
- Goyal, R., & Bansal, P. (2026). Where emotion meets action: Designing company websites for buying behavior—An empirical study using PLS-SEM. *Journal of Theoretical and Applied Electronic Commerce Research*, 21(1), 1–18.
- Grewal, D., Noble, S. M., Roggeveen, A. L., & Nordfält, J. (2023). The future of in-store technology and its impact on consumer behavior. *Journal of the Academy of Marketing Science*, 51(1), 1–22.
- Ha, L., & McCann, K. (2022). An integrated model of advertising clutter in offline and online media. *International Journal of Advertising*, 41(3), 456–478.
- Howard, J. A., & Sheth, J. N. (1969). *The theory of buyer behavior*. John Wiley & Sons.
- Kim, J., & Han, K. (2022). The impact of online advertising on consumer decision-making: The moderating role of product involvement. *Sustainability*, 14(4), 2125.
- Kotler, P., Keller, K. L., & Chernev, A. (2022). *Marketing management* (16th ed.). Pearson Education.
- Kumar, S., Gupta, R., & Holani, U. (2026). Social media advertising and consumer buying behaviour: An empirical study. *International Journal of Consumer Studies*, 50(1), 112–128.
- Liu-Thompkins, Y. (2022). A decade of online advertising research: What we learned and what we need to know. *Journal of Advertising*, 51(1), 1–13.
- Okazaki, S., Li, H., & Hirose, M. (2022). Consumer privacy concerns and responses to personalized advertising: A meta-analysis. *Journal of Business Research*, 142, 871–884.
- Roggeveen, A. L., & Sethuraman, R. (2022). How the COVID-19 pandemic may change the world of retailing. *Journal of Retailing*, 98(2), 169–171.
- Schiffman, L. G., Wisenblit, J., Kumar, S. R., & Joseph, N. (2023). *Consumer behavior* (13th ed.). Pearson Education.
- Smith, A. (2022). The impact of digital advertising on consumer behavior in the 21st century. *Journal of Digital Marketing Research*, 14(3), 45–60.
- Solomon, M. R. (2024). *Consumer behavior: Buying, having, and being* (14th ed.). Pearson Education.
- Taylor, D., Lewin, J., & Strutton, D. (2022). Friends, fans, and followers: Do ads work on social networks? *Journal of Advertising Research*, 62(1), 56–70.
- Tran, G. A., & Strutton, D. (2022). Comparing email and social media marketing: The effects of consumer attitudes on purchase intention. *Journal of Marketing Communications*, 28(5), 456–478.

- Vasan, M., Rao, P., & Gupta, A. (2025). Examining the impact of advertising, firm-generated content, and user-generated content on customers' propensity to buy food online. *Future Business Journal*, 11(1), 1–16. <https://doi.org/10.1186/s43093-025-00492-z>
- Yadav, M. S., & Pavlou, P. A. (2023). Marketing in computer-mediated environments: Research synthesis and future directions. *Journal of Marketing*, 87(1), 1–20.
- Zhang, J., & Mao, E. (2023). From online exposure to purchase intention: The role of digital advertising credibility and engagement. *Electronic Commerce Research and Applications*, 58, 101221. <https://doi.org/10.1016/j.elerap.2023.101221>

